

JVC

SERVICE MANUAL

COLOUR TELEVISION

AV-28WFR1EKS/A AV-28WFR1EK/A

BASIC CHASSIS

JK

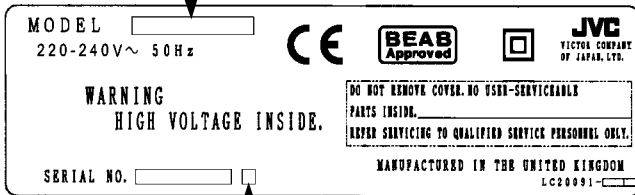
The following items for the AV-28WFR1EKS/A / AV-28WFR1EK/A models were changed from those of the AV-28WFR1EKS / AV-28WFR1EK models.

Therefore, this service manual describes only the items which differ from those of the AV-28WFR1EKS / AV-28WFR1EK service manual.

For details other than those described in this manual, please refer to the AV-29RXC service manual(No.51729, Jul. 2000).

HOW TO IDENTIFY MODELS

While referring to the illustration given below, identify model name on the rating label affixed to the rear cover.

	Model Parts	AV-28WFR1EKS/A	AV28WFR1EK/A
⚠	Rating label	LC20091-030A-U	LC20091-029A-U
		<p>AV-28WFR1EKS / AV-28WFR1EK</p>  <p>Indicated "A"</p>	

CHANGED ITEMS

USING PW BOARD DIFFERENCE TABLE (Page 38)

PWB ASS'y \ Model	AV-28WFR1EKS AV-28WFR1EK No.51695	AV-28WFR1EKS/A AV-28WFR1EK/A No.51695B
MAIN PWB	SJK-1904A-U2	SJK-1906A-U2
POWER & DEF. PWB	SJK-2504A-U2	SJK-2508A-U2
CRT SOCKET PWB	SJK-3502A-U2	SJK-3503A-U2
FRONT CONTOROL PWB	SJK-8504A-U2	SJK-8506A-U2
AV SEL. PWB	SJK0S902A-U2	SJK0S905A-U2

PARTS DIFFERENCE TABLE

MODEL No.		AV-28WFR1EKS AV-28WFR1EK No.51695	AV-28WFR1EKS/A AV-28WFR1EK/A No.51695B	PARTS NAME	
⚠	REF. No.	PARTS No.	PARTS No.		
EXPLODED VIEW PARTS LIST (Page 36)					
⚠	L01	QQW0070-001	QQW0100-001	DEG COIL	
⚠	L03	CELD904-001	—————	ROTATION COIL	
⚠	V01	W66ERF031X013	W66QDE891X923	CRT(ITC)	
⚠	T2551	QQH0065-002-I2	QQH0089-002-I2	FBT(SERVICE)	
⚠	6	QNZ0407-002	QNZ0369-003	ANODE WIRE	
⚠	11	LC20091-010A-U (AV-28WFR1EKS)	LC20091-029A-U (AV-28WR1EKS/A)	RATING LABEL	
⚠	11	LC20091-017A-U (AV-28WFR1EK)	LC20091-030A-U (AV-28WFR1EK/A)	RATING LABEL	
⚠	100	LC10662-008B-U (AV-28WFR1EKS)	LC10662-008C-U (AV-28WFR1EKS/A)	FRONT CABINET ASSY	
⚠	100	LC10662-004C-U (AV-28WFR1EK)	LC10662-004D-U (AV-28WFR1EK/A)	FRONT CABINET ASSY	
PACKING PARTS LIST(Page 49)					
		—————	LCT0931-001A-U	INST SHEET	
PRINTED WIRING BOARD PARS LIST MAIN PW BOARD ASS'Y (Page 39)					
PW BOARD No.		SJK-1904A-U2	SJK-1906A-U2		
⚠	Symbol No.	PARTS No.	PARTS No.	PARTS NAME	DESCRIPTION
	C1726	NDC21HJ-391X	NDC21HJ-821X	C CAP.	820pF 50V J

POWER & DEF. PW BOARD ASS'Y(Page 41~42)

PW BOARD No.		SJK-2504A-U2	SJK-2508A-U2	PARTS NAME	DESCRIPTION
△	Symbol No.	PARTS No.	PARTS No.		
	R2403	QRE141J-123	QRA14CF-3091Y	CR	3.09k Ω 1/4W F
	R2414	QRE121J-3R9Y	QRE121J-100Y	CR	10 Ω 1/2W J
	R2467	QRG039J-120	QRL039J-330	OM R	33 Ω 3W J
	R2551	QRT039J-3R3	QRT039J-1R5	MF R	1.5 Ω 3W J
	R2552	QRT039J-3R3	QRT039J-1R5	MF R	1.5 Ω 3W J
△	R2554	QRZ9021-1R5	QRZ9022-R47	FR	0.47 Ω 1W J
△	R2556	QRZ9011-4R7	—————	FUSI. RESISTER	Delete
△	R2557	QRZ9021-100	—————	FUSI. RESISTER	Delete
	C2461	QETN2AM-475Z	QEZ0195-475Z	E CAP.	4.7 μ F 50V M
△	C2521	QFZ0200-352	QFZ0200-282	MPP CAP.	2800pF 1.5kVH \pm 3%
△	C2523	QFP32GJ-223	QFP32GJ-183	PP CAP.	0.018 μ F 400V J
	C2524	QFM72DK-104	QFM72DK-563	M CAP.	0.056MF 200V K
	C2525	QFZ0199-354	—————	MPP CAP.	Delete
	C2526	QFZ0199-254	QFZ0197-304	MPP CAP.	0.3 μ F 250V J
	C2528	QFZ0199-683	—————	MPP CAP.	Delete
	C2529	QFZ0199-104	QFZ0197-473	MPP CAP.	0.047 μ F 250V J
	C2532	QFZ0199-334	—————	MPP CAP.	Delete
	C2542	QFZ0199-204	QFZ0197-434	MPP CAP.	0.43 μ F 250V J
	C2543	QFZ0199-154	QFZ0197-184	MPP CAP.	0.18 μ F 250V J
	C2561	QFLC1HJ-683Z	QFV71HJ-184Z	M CAP	0.18 μ F 50V J
	T2521	CE42549-001J1	—————	BRIGE COIL	Delete
△	T2551	QQH0065-002-I2	QQH0089-001	FBT	
	T2561	QQR0898-001	QQH0898-001	DEF.TRANSF.	
	L2461	QQLZ028-822	QQLZ027-821	CHOKE COIL	
	L2521	QQLZ028-101	QQLZ028-501	CHOKE COIL	
	D2403	1SS133-T2	—————	SI.DIODE	Delete
	D2555	MTZJ12C-T2	—————	ZENER DIODE	Delete
	D2556	MTZJ12C-T2	—————	ZENER DIODE	Delete
	K2501	CE41433-001Z	—————	BEADE CORE	Delete
	K2502	CE41433-001Z	—————	BEADE CORE	Delete
△	PC2901	TLP721F(D4-GR)	TLP421F/D4-GR/	I.C. (PH.COUPLER)	



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28WFR1EKSA-U #003
28WFR1EKA-U #003



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DP2050

JVC

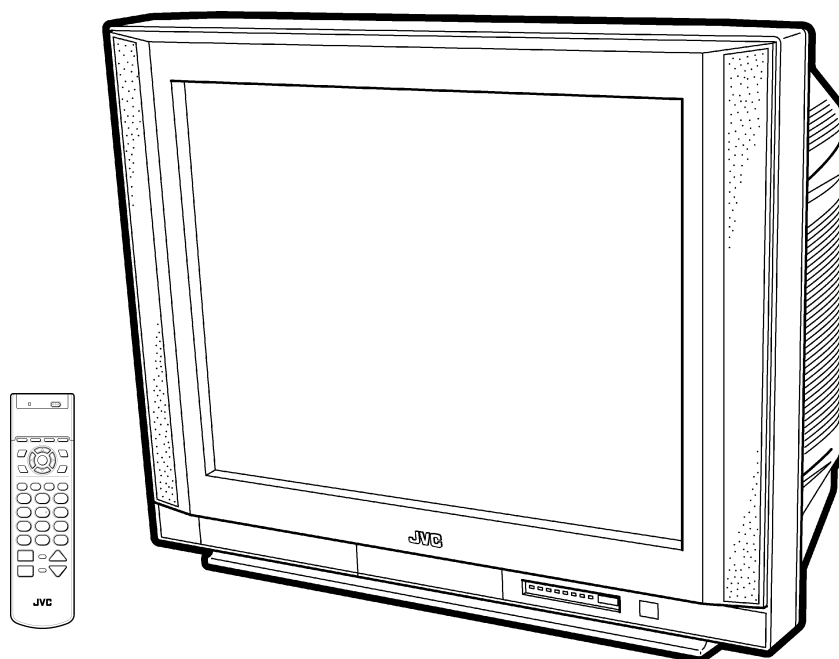
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AV-29RX_(C)



CONTENTS

■ SPECIFICATIONS	2
■ SAFETY PRECAUTIONS	3
■ FEATURES.....	4
■ FUNCTIONS	5
■ SPECIFIC SERVICE INSTRUCTIONS	6
■ SERVICE ADJUSTMENTS	13
★ STANDARD CIRCUIT DIAGRAM (APPENDIX)	2-1
■ PARTS LIST	33

SPECIFICATIONS

Item		CONTENTS
Dimensions (W × H × D)		732mm × 588mm × 508mm
Mass		52.0kg
TV RF System		B, G, I, D, K, K1, M
Colour System		PAL, SECAM, NTSC3.58, NTSC4.43
Stereo System		Play back stereo only
Receiving Frequency		VHF(L) 46.25MHz~168.25MHz VHF (H) 175.25MHz~463.25MHz UHF 471.25MHz ~ 863.25MHz CATV Mid(X-Z, S1-S10), Super(S11-S20), Hyper(S21-S41) bands receivable
Intermediate Frequency		VIF Carrier 38.0MHz SIF Carrier 33.5MHz(4.5MHz), 32.5MHz(5.5MHz), 32.0MHz(6.0MHz), 31.5MHz(6.5MHz)
Colour Sub Carrier Frequency		PAL 4.43MHz SECAM 4.40625MHz, 4.25MHz NTSC 3.58MHz / 4.43MHz
Power Input		AC 110V~240V , 50/60Hz
Power Consumption		193W(Max) / 137W(Avg)
Picture Tube		Visible size : 68cm measured diagonally
High Voltage		32.0kV±1.5kV (at zero beam current)
Speaker & Audio Output		Open dome speaker 10cm round × 2, 10W+10W
Video Audio Input terminals		
Video1	S-Video	Y : 1V _(p-p) positive (Negative sync provided, when terminated with 75 Ω) C : 0.286V _(p-p) (Burst signal, when terminated with 75 Ω)
	Video	1V _(p-p) 75 Ω (RCA pin jack)
	Audio(L/R)	500mV(rms) (-4dBs), High impedance (RCA pin jack)
Video2	Video	1V _(p-p) 75 Ω (RCA pin jack)
	Audio(L/R)	500mV(rms) (-4dBs), High Impedance (RCA pin jack)
Video3	Video/Y	V : Composite video 1V _(p-p) 75 Ω (RCA pin jack) Y : Component video 1V _(p-p) 75 Ω (RCA pin jack)
	Cb	Component video B-Y 0.7V _(p-p) 75 Ω (RCA pin jack)
	Cr	Component video R-Y 0.7V _(p-p) 75 Ω (RCA pin jack)
	Audio(L/R)	500mV(rms) (-4dBs), High Impedance (RCA pin jack)
Video4 (Front terminal)	S-Video	Y : 1V _(p-p) positive (Negative sync provided, when terminated with 75 Ω) C : 0.286V _(p-p) (Burst signal, when terminated with 75 Ω)
	Video	1V _(p-p) 75 Ω (RCA pin jack)
	Audio(L/R)	500mV(rms) (-4dBs), High impedance (RCA pin jack)
Video Audio Output terminal		
	Video	1V _(p-p) 75 Ω (RCA pin jack)
	Audio(L/R)	500mV(rms) (-4dBs), High Impedance (RCA pin jack)
Aerial Input Term		75 Ω unbalanced, Coaxial
Headphone jack		Stereo mini jack (ϕ 3.5mm)
AV Compu Link terminal		AV Compu Link II , mini jack (ϕ 3.5mm)
Remote Control Unit		RM-C113 (AA/R06 dry battery × 2)

Design & specifications are subject to change without notice.

SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (Δ) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.
4. **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED(NEUTRAL) : (↘) side GND and EARTH : (⊕) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.
If above note will not be kept, a fuse or any parts will be broken.
5. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).
6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.
7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.
8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

9. Isolation Check

(Safety for Electrical Shock Hazard)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screw heads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

(1) Dielectric Strength Test

The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second.

(. . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)

This method of test requires a test equipment not generally found in the service trade.

(2) Leakage Current Check

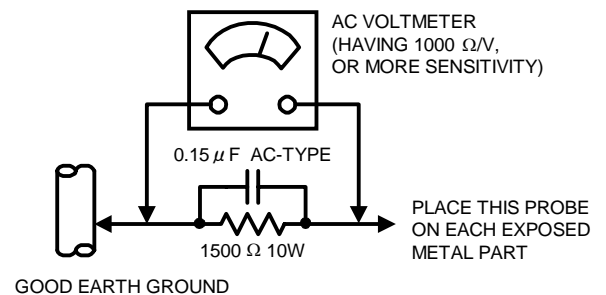
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).

However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

● Alternate Check Method

Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).

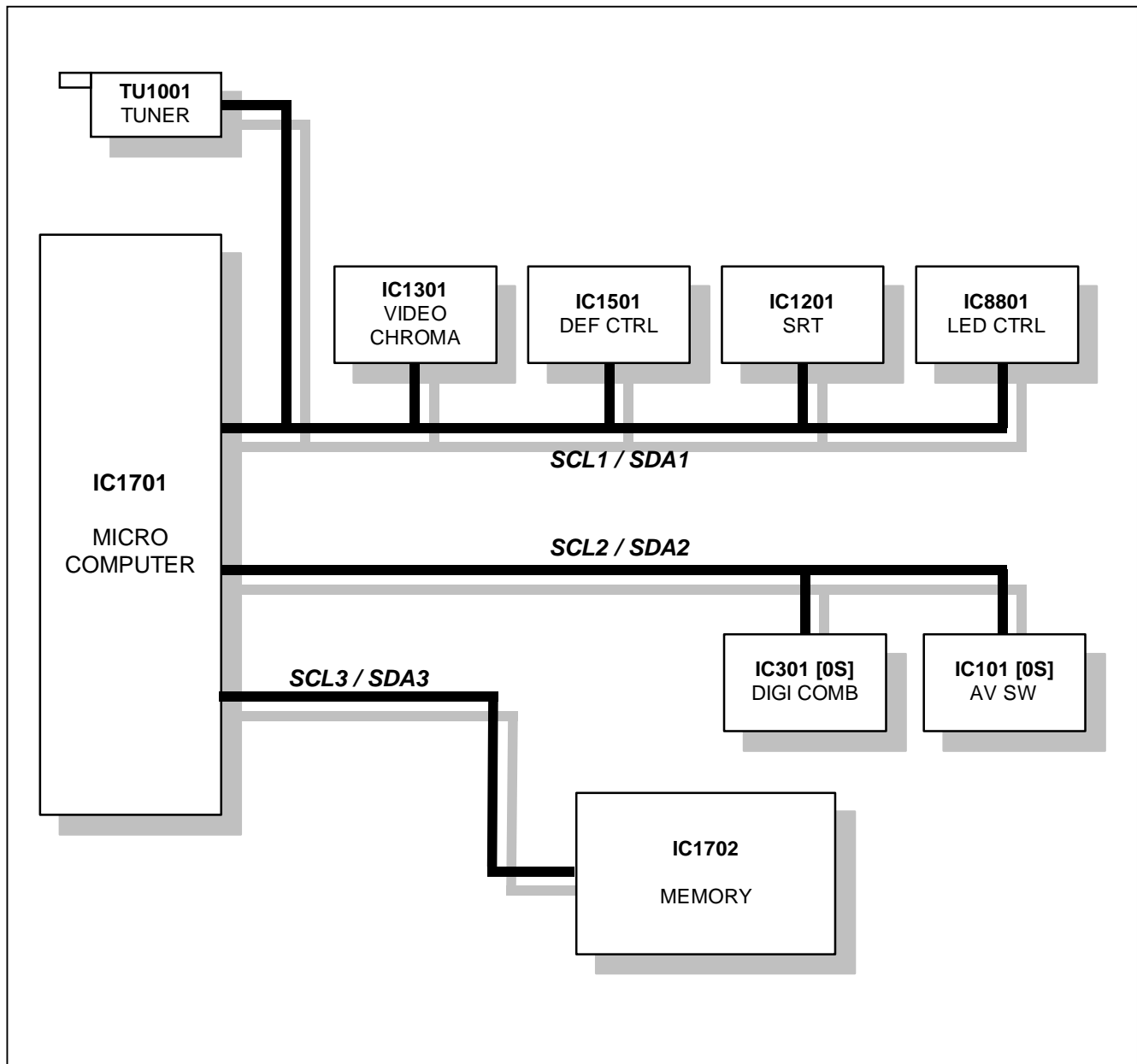
However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



FEATURES

- By preference, users can select the picture size from REGULAR, ZOOM, 16:9 modes.
- Users can make fun to connect the Digital Video Disk player by using the component video signal input terminal.
- Built-in ECO (ECONOMY, ECOLOGY) MODE.
In accordance with the brightness in a room, the brightness and/or contrast of the picture can be adjusted automatically to make the optimum picture which is easy on the eye.
- I²C Bus controls the many ICs which have various functions each other.

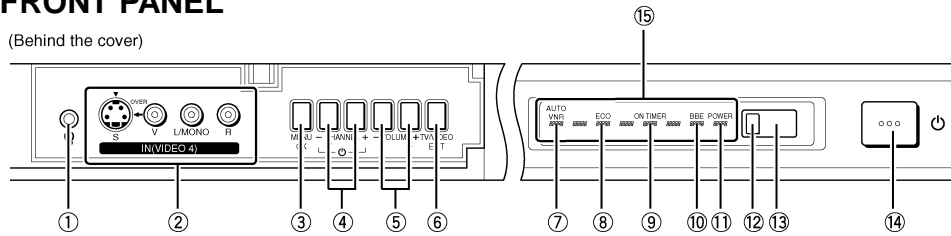
I²C BUS CONTROL SYSTEM CHART



FUNCTIONS

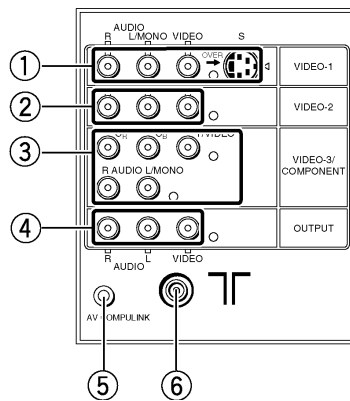
■ FRONT PANEL

(Behind the cover)



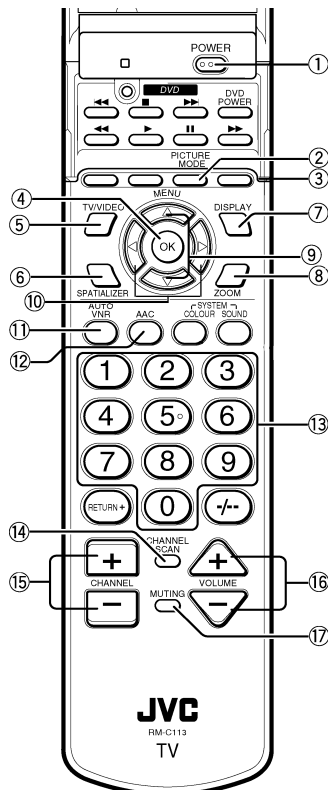
- | | | |
|--------------------------------|------------|-------------------------|
| ① Headphone jack | ⑥ TV/VIDEO | ⑪ POWER |
| ② Video-4 terminal | ⑦ AUTO VNR | ⑫ ECO sensor |
| ③ MENU OK | ⑧ ECO | ⑬ Remote control sensor |
| ④ Channel +/- (MENU UP/DOWN) | ⑨ ON TIMER | ⑭ Main POWER SW |
| ⑤ Volume +/- (MENU LEFT/RIGHT) | ⑩ BBE | ⑮ Dancing LED |

■ REAR TERMINAL

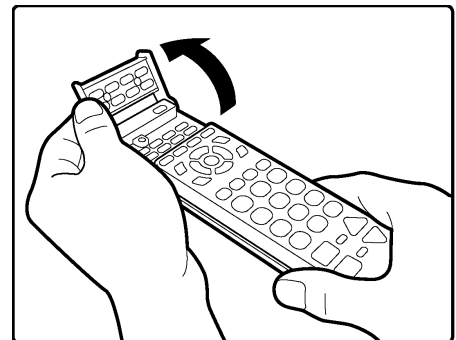


- | |
|------------------------------------|
| ① Video-1 terminal (S,V,L,R) |
| ② Video-2 terminal (V,L,R) |
| ③ Video-3 terminal (V/Y,Cb,Cr,L,R) |
| ④ Output terminal (V,L,R) |
| ⑤ AV COMPULINK terminal |
| ⑥ Aerial socket |

■ REMOTE CONTROL UNIT(RM-C113)



- | |
|-------------------|
| ① POWER |
| ② PICTURE MODE |
| ③ COLOUR |
| ④ MENU OK |
| ⑤ TV/VIDEO |
| ⑥ SPATIALIZER |
| ⑦ DISPLAY |
| ⑧ ZOOM |
| ⑨ MENU UP/DOWN |
| ⑩ MENU LEFT/RIGHT |
| ⑪ AUTO VNR |
| ⑫ AAC |
| ⑬ CHANNEL |
| ⑭ CHANNEL SCAN |
| ⑮ CHANNEL +/- |
| ⑯ VOLUME +/- |
| ⑰ MUTING |



SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY PROCEDURE

REMOVING THE REAR COVER

1. Disconnect the power plug from wall outlet.
2. As shown in the Fig.2, remove the **16** screws marked **(A)**.
3. Withdraw the rear cover toward you.

REMOVING THE AV TERMINAL BOARD

- After removing the REAR COVER.
1. As shown in Fig.2, remove the **5** screws marked **(B)**.
 2. Then remove the AV TERMINAL BOARD.

REMOVING THE CHASSIS

- After removing the REAR COVER and AV TERMINAL BOARD.
1. Slightly raise the both sides of the chassis by hand and remove the **2** claws under the both sides of the chassis from the front cabinet.
 2. Withdraw the chassis backward.
(If necessary, take off the wire clamp, connectors etc.)

REMOVING THE SPEAKER BOX

- After removing the REAR COVER.
1. As shown in Fig. 2, removing the **2** screws marked **(C)**, then remove the speaker box.
 2. Follow the same steps when removing the other hand speaker box.

NOTE : When removing the screws marked **(C)** of the speaker box, remove the lower side screw first, and then remove the upper one.

REMOVING THE CONTROL BASE

- After removing the chassis.
1. As shown in Fig.1, while pushing down the claws marked **(D)**, remove the CONTROL BASE in the arrow direction **(E)**.

CHECKING THE PW BOARD

To check the PW Board from back side.

1. Pull out the chassis (refer to REMOVING THE CHASSIS).
2. Erect the chassis vertically so that you can easily check the back side of the PW Board.

CAUTION

- When erecting the chassis, be careful so that there will be no contacting with other PW Board.
- Before turning on power, make sure that the wire connector is properly connected.
- **When conducting a check with power supplied, be sure to confirm that the CRT EARTH WIRE (BRAIDED ASS'Y) is connected to the CRT SOCKET PW board.**

WIRE CLAMPING AND CABLE TYING

1. Be sure to clamp the wire.
2. Never remove the cable tie used for tying the wires together.
Should it be inadvertently removed, be sure to tie the wires with a new cable tie.

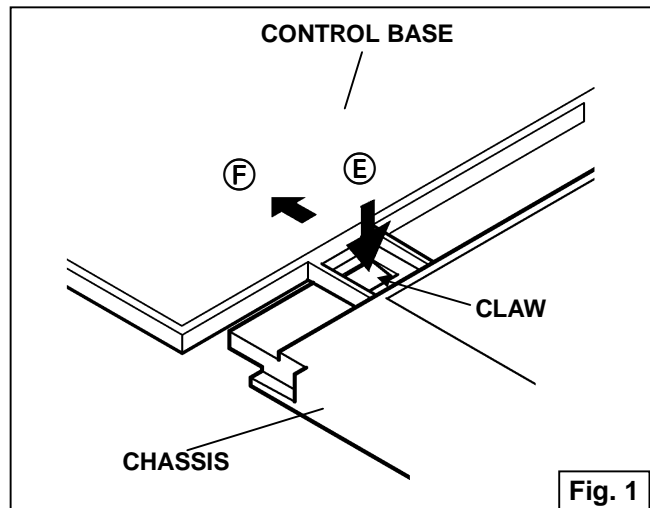


Fig. 1

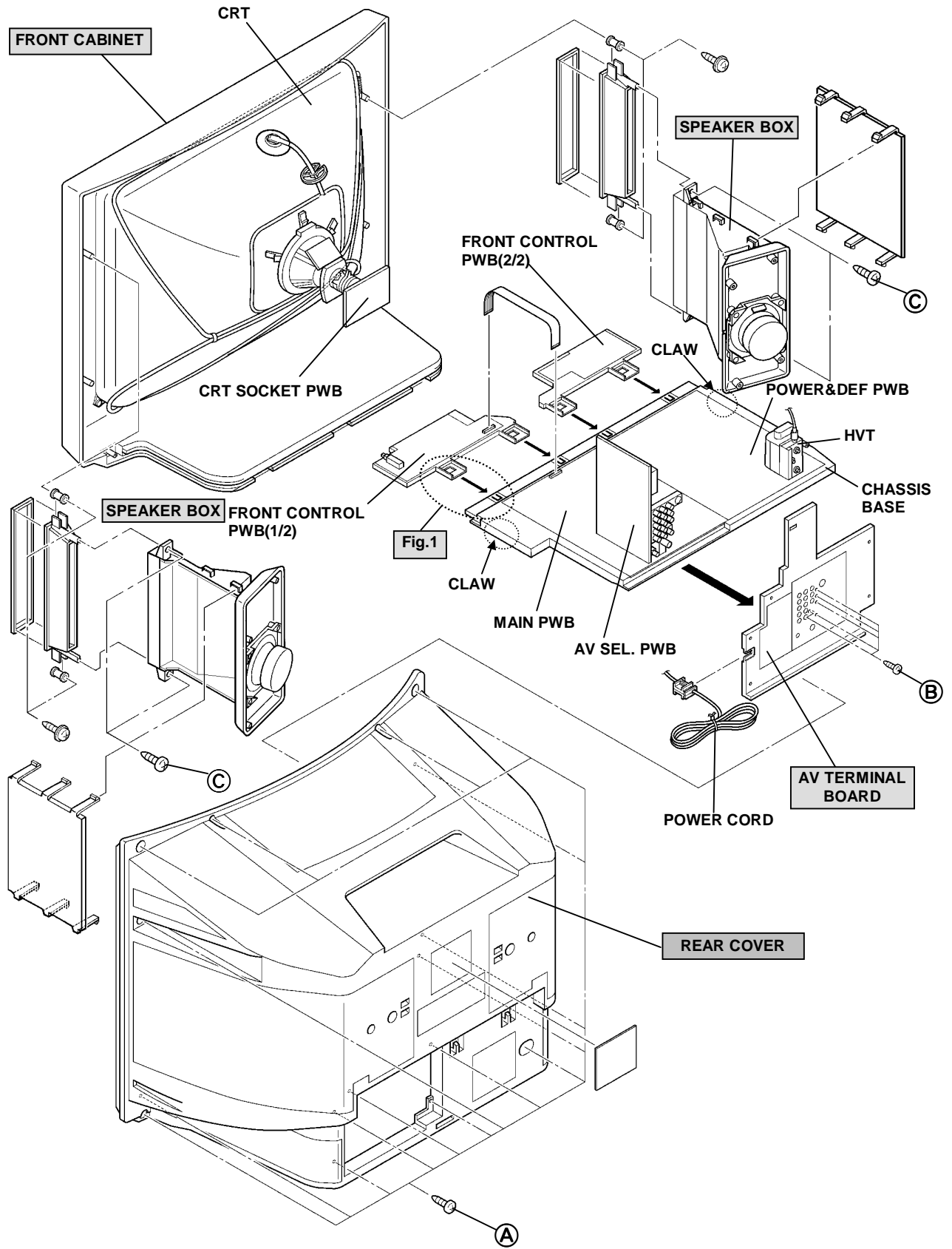


Fig.2

REMOVING THE CRT

- Replacement of the CRT should be performed by 2 or more persons.
- After removing the cover, chassis etc.

1. Putting the CRT change table on soft cloth, the CRT change table should also be covered with such soft cloth (shown in Fig.3).
2. While keeping the surface of CRT down, mount the TV set on the CRT change table balanced well as shown in Fig.3.
3. Remove 4 screws marked by arrows with a box type screw driver as shown in Fig.4.
Since the cabinet will drop when screws have been removed, be sure to support the cabinet with hands.
4. After 4 screws have been removed, put the cabinet slowly on cloth (At this time, be carefully so as not to damage the front surface of the cabinet) shown in Fig.5.
The CRT should be assembled according to the opposite sequence of its dismantling steps.
The CRT change table should preferably be smaller than the CRT surface, and its height be about 35cm.

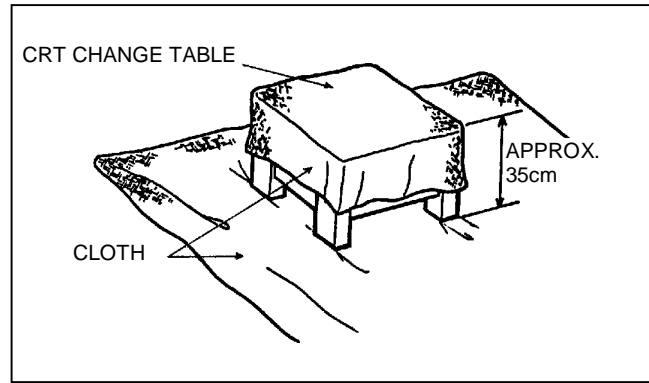


Fig. 3

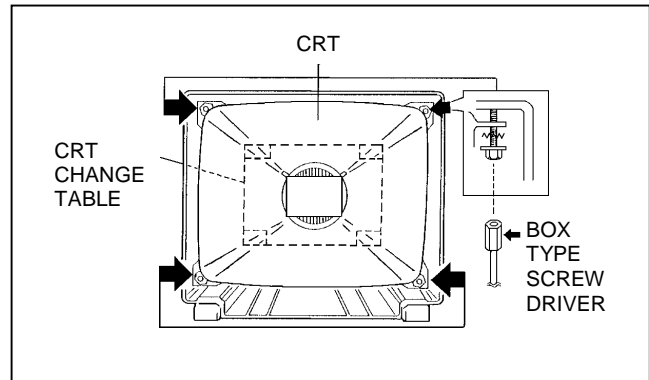


Fig. 4

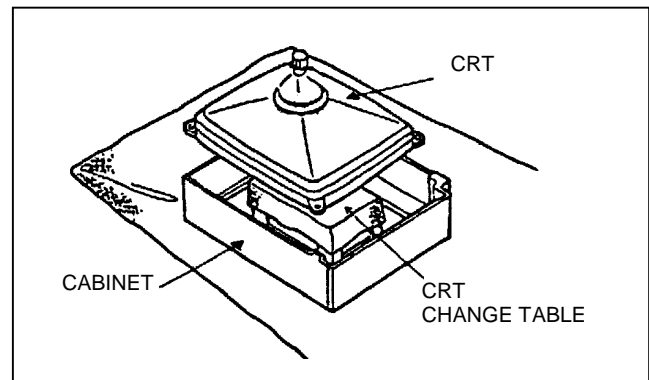


Fig. 5

COATING OF SILICON GREASE FOR ELECTRICAL INSULATION ON THE CRT ANODE CAP SECTION.

Subsequent to replacement of the CRT and HV transformer or repair of the anode cap, etc. by dismantling them, be sure to coat silicon grease for electrical insulation as shown in Fig.6. Wipe around the anode button with clean and dry cloth. (Fig.6) Coat silicon grease on the section around the anode button. At this time, take care so that any silicon greases do not stick to the anode button. (Fig.7)

Silicon grease product No. KS - 650N

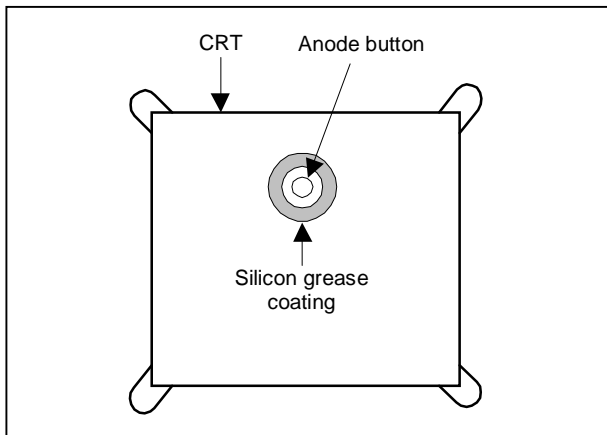


Fig. 6

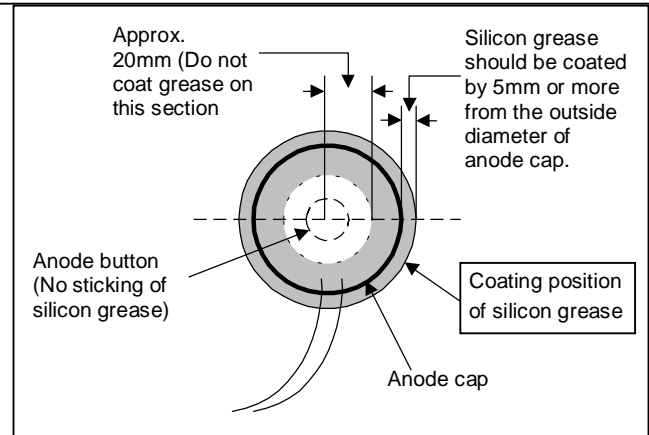


Fig. 7

REPLACEMENT OF MEMORY ICs

1. Memory ICs

This model uses memory ICs. This memory IC data are for proper operation of the video and deflection circuits. When replacing, be sure to use ICs written with the initial values of data.

2. Procedure for replacing memory ICs

(1) Power off

Switch off the power and disconnect the power plug from the wall outlet.

(2) Replace the memory IC

Be sure to use memory ICs written with the initial data values.

(3) Power on

Connect the power plug into the wall outlet and switch power on.

(4) Check and set SYSTEM CONSTANT SET

It must not adjust without signal.

- 1) Should be open the door on the surface of the remote control unit. Then DVD control buttons and PICTURE MODE buttons will be appeared.
- 2) Press the **DISPLAY** key and the **PICTURE MODE** key of the REMOTE CONTROL UNIT simultaneously.
- 3) The SERVICE MENU screen of Fig. 1 will be displayed.
- 4) While the SERVICE MENU is displayed, again press the **DISPLAY** key and **PICTURE MODE** key simultaneously, and the SYSTEM CONSTANT SET screen of Fig. 2 will be displayed.
- 5) Check the setting values of the SYSTEM CONSTANT SET of Table 1 in page later. If the value is different, select the setting item with the **MENU UP/DOWN** key, and set the correct value with the **MENU LEFT/RIGHT** key.
- 6) Press the **OK** key to memorize the setting value.
- 7) Press the **DISPLAY** key twice, and return to the normal screen.

(5) Receive channel setting

Refer to the OPERATING INSTRUCTIONS, and set the receive channels as described.

(6) User settings

Check the user setting items according to Table 2. Where these do not agree, refer to the OPERATING INSTRUCTIONS.

(7) SERVICE MENU setting

Verify what to see in the SERVICE MENU, and set what ever in necessary.

KEY ASSIGNMENT OF REMOTE CONTROL UNIT

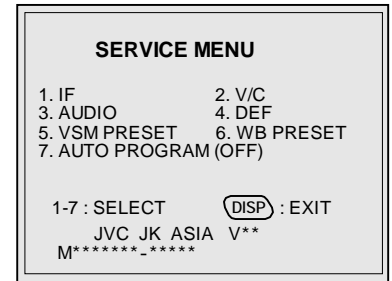
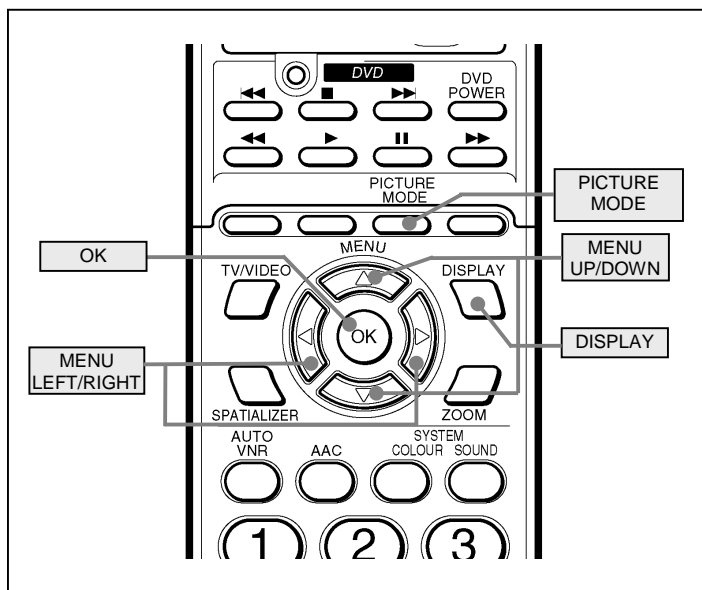


Fig.1

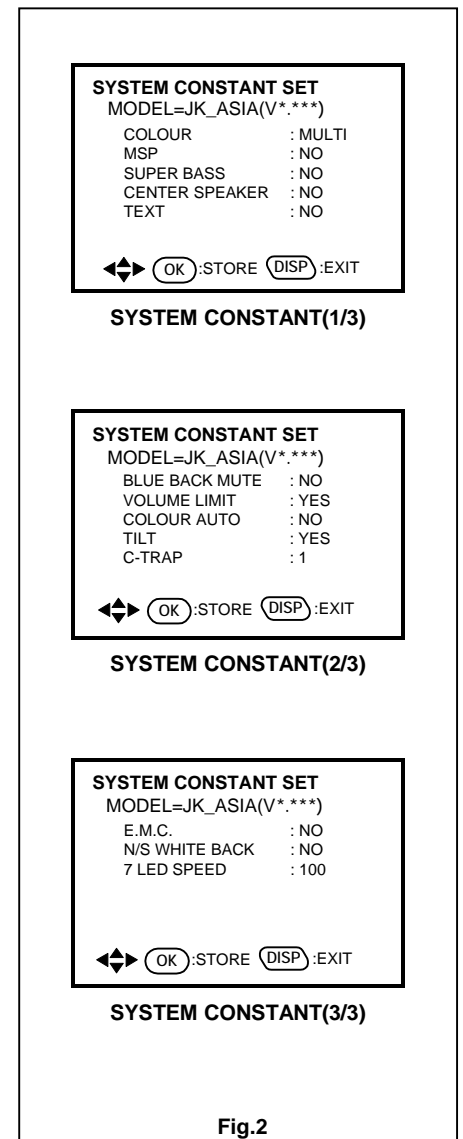


Fig.2

INITIAL SETTING VALUES OF SYSTEM CONSTANT SET (TABLE 1)

CONTENTS	VARIABLE RANGE	INITIAL SETTING VALUE
COLOUR	→ MULTI → → TRIPLE → → PAL →	MULTI
MSP	→ YES → → NO →	NO
SUPER BASS	→ YES → → NO →	NO
CENTER SPEAKER	→ YES → → NO →	NO
TEXT	→ YES → → NO →	NO
BLUE BACK MUTE	→ YES → → NO →	NO
VOLUME LIMIT	→ YES → → NO →	YES
COLOUR AUTO	→ YES → → NO →	NO
TILT	→ YES → → NO →	YES
C-TRAP	→ 1 → → 0 →	1
E.M.C.	→ YES → → NO →	NO
N/S WHITE BACK	→ YES → → NO →	NO
7 LED SPEED	→ 00 → → 10 → → 20 → → → → 1250 → → 1260 → → 1270 →	100

USER SETTING CONDITIONS (TABLE2)

PICTURE SETTING		FEATURES	
PICTURE MODE CONTRAST BRIGHT SHARP COLOUR TINT WHITE BALANCE	STANDARD CENTER COOL	SLEEP TIMER ON TIMER BLUE BACK CHILD LOCK CHANNEL GUARD AUTO SHUT OFF VIDEO-3 SETTING	OFF _____ ON OFF _____ OFF COMPONENT
PICTURE FEATURES		INSTALL	
AAC AUTO VNR COLOUR SYSTEM ZOOM ECO SENSER PICTURE TILT	OFF(TV)/ON(VIDEO) AUTO TV : According to preset CH VIDEO : AUTO REGULAR DISPLAY CENTER	LANGUAGE AUTO PROGRAM EDIT / MANUAL	_____ _____ PRESET CH only Others : blank
SOUND SETTING		DEMO	
BASS TREBLE BALANCE AI VOLUME BBE SPATIALIZER	CENTER ON ON OFF	DEMO	OFF

SERVICE MENU SETING ITEMS (TABLE 3)

Setting item	Setting value	Setting item	Setting value
1. IF	VCO	4. DEF	1. V-SHIFT 2. V-SIZE 3. SUBTITLE 4. H-CENT 5. H-SIZE 6. EW-PIN 7. TRAPEZ 8. EW. COR. L 9. EW. COR. H 10. V. S-COR 11. V-LIN 12. H-BLK-R 13. H-BLK-L 14. V-EHT 15. H-EHT 16. EHT-GAIN
2. V / C	1. CUT OFF (R, G, B) 2. DRIVE (R, B) 3. BRIGHT 4. CONT. 5. COLOUR 6. TINT 7. BLACK OFFSET (R-Y, B-Y) 8. SHARP	5. VSM PRESET BRIGHT STANDARD SOFT	1. BRIGHT 2. CONT 3. COLOUR 4. SHARP 5. TINT
3. AUDIO (Do not adjust)	1. ERROR LIMIT 2. A2 ID THR 3. BASS 4. TREBLE	6. WB PRESET COOL MID WARM	1. R DRIVE 2. B DRIVE
		7. AUTO PROGRAM (Do not adjust)	ON / OFF

REPLACEMENT OF CHIP COMPONENT

■ CAUTIONS

1. Avoid heating for more than 3 seconds.
2. Do not rub the electrodes and the resist parts of the pattern.
3. When removing a chip part, melt the solder adequately.
4. Do not reuse a chip part after removing it.

■ SOLDERING IRON

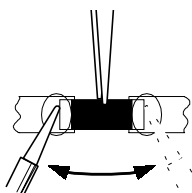
1. Use a high insulation soldering iron with a thin pointed end of it.
2. A 30w soldering iron is recommended for easily removing parts.

■ REPLACEMENT STEPS

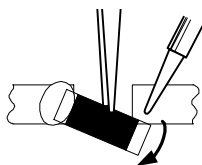
1. How to remove Chip parts

◆ Resistors, capacitors, etc

- (1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.

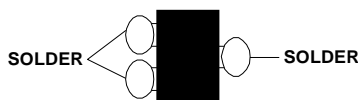


- (2) Shift with tweezers and remove the chip part.

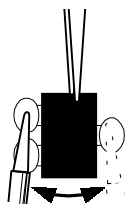


◆ Transistors, diodes, variable resistors, etc

- (1) Apply extra solder to each lead.



- (2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.

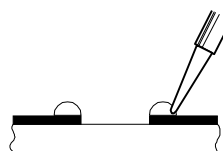


Note : After removing the part, remove remaining solder from the pattern.

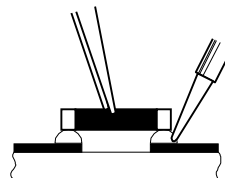
2. How to install Chip parts

◆ Resistors, capacitors, etc

- (1) Apply solder to the pattern as indicated in the figure.

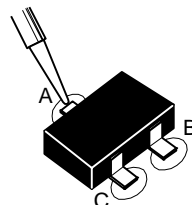


- (2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

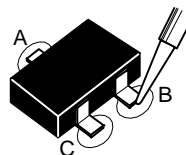


◆ Transistors, diodes, variable resistors, etc

- (1) Apply solder to the pattern as indicated in the figure.
- (2) Grasp the chip part with tweezers and place it on the solder.
- (3) First solder lead **A** as indicated in the figure.



- (4) Then solder leads **B** and **C**.



SERVICE ADJUSTMENTS

BEFORE STARTING SERVICE ADJUSTMENT

1. There are 2 ways of adjusting this TV: One is with the REMOTE CONTROL UNIT and the other is the conventional method using adjustment parts and components.
2. The adjustment with the REMOTE CONTROL UNIT is made on the basis of the initial setting values. The setting values which adjust the screen to its optimum condition may differ from the initial setting values.
3. Make sure that connection is correctly made to AC power source.
4. Turn on the power of the set and equipment before use, and start the adjustment procedures after waiting at least 30 minutes.
5. Unless otherwise specified, prepare the most suitable reception or input signal for adjustment.
6. Never touch any adjustment parts, which are not specified in the list for this adjustment variable resistors, transforms, condensers, etc.
7. Preparation for adjustment (presetting)
Unless otherwise specified in the adjustment items, preset the following functions with the REMOTE CONTROL UNIT.

User mode setting condition

PICTURE MODE (VSM)	STANDARD
WHITE BALANCE	COOL
ZOOM	REGULAR
CONTRAST	CENTER
BRIGHT	CENTER
SHARP	CENTER
COLOUR	CENTER
AAC	OFF
AUTO VNR	OFF
PICTURE TILT	CENTER
BLUE BACK	OFF
AUTO SHUTOFF	OFF
ECO SENSOR	OFF
AI VOLUME	OFF
BBE	OFF
SLEEP TIMER	OFF
BALANCE	CENTER
SPATIALIZER	OFF

MEASURING INSTRUMENT AND FIXTURES

1. DC voltmeter (or digital voltmeter)
2. Oscilloscope
3. Signal generator (Pattern generator) [PAL / SECAM / NTSC]
4. Remote control unit

ADJUSTMENT CONTENTS

- CHECK OF B1 POWER SUPPLY
- CHECK OF HIGH VOLTAGE
- FOCUS ADJUSTMENT
- CHECK OF IF CIRCUIT
- SETTING OF VSM PRESET
- SETTING OF WHITE BALANCE PRESET
- VIDEO / CHROMA CIRCUIT ADJUSTMENT
- DEFLECTION CIRCUIT ADJUSTMENT
- AUDIO CIRCUIT ADJUSTMENT **[Do not adjust]**
- PURITY, CONVERGENCE ADJUSTMENT

BASIC OPERATION OF SERVICE MENU

1. The adjustment using SERVICE MENU

The following adjustment items use the SERVICE MENU in the series of the adjustment. The adjustments are made on the basis of the initial setting values. The adjustment values which adjust the screen to the optimum condition can be different from the initial setting values. With the SERVICE MENU, various settings can be made, and they are broadly classified in the following items of settings.

- IF Adjustment of the IF circuits.
- V/C Adjustment of the VIDEO/CHROMA circuit.
- AUDIO Adjustment of the sound circuit **[Do not adjust]**.
- DEF Adjustment of the DEFLECTION circuit for each aspect mode given below
 - REGULAR (50/60Hz)
 - ZOOM (50/60Hz)
 - 16:9 (50/60Hz)
- VSM PRESET Adjustment of the initial setting values of VSM condition as BRIGHT, STANDARD and SOFT.
(VSM : Video Status Memory)
- WB PRESET Adjustment of the initial setting value of WHITE BALANCE PRESET values as COOL, MID and WARM.
- AUTO PROGRAM By turning the power switch on, you can get the state of AUTO PROGRAM **[Do not adjust]**.

2. Key operation of the SERVICE MENU

[Enter to SERVICE MENU]

Press the **DISPLAY** key and the **PICTURE MODE** key of the REMOTE CONTROL UNIT simultaneously. Then enter the SERVICE MENU mode as shown in Fig.1.

[Select the SUB MENU from MAIN MENU]

In main SERVICE MENU, press the 1~7 key of the remote control unit, to select any of the adjustment items.

The colours which selected item characters are changed.

[Method of setting]

1. IF

[VCO]

- ① 1 Key Select 1.IF.
- ② The VCO (CW) screen will be displayed.
- ③ DISPLAY Key ... As you press this key, you will return to the **SERVICE MENU**.

SERVICE MENU

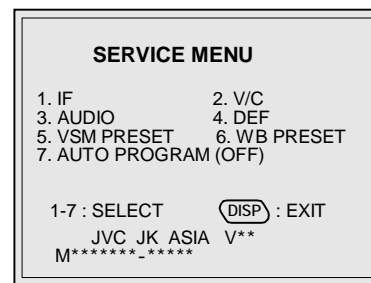
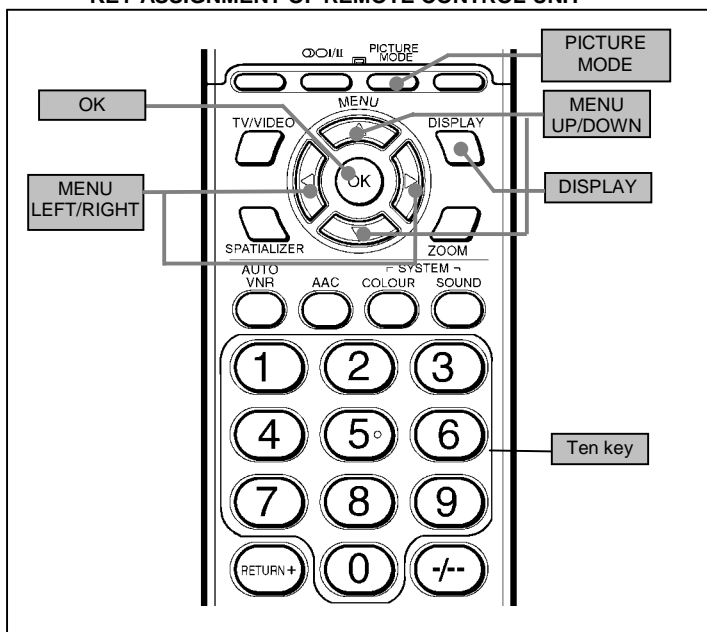
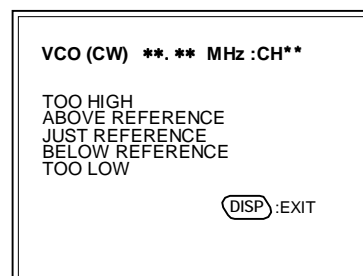


Fig.1

KEY ASSIGNMENT OF REMOTE CONTROL UNIT



SUB MENU 1.IF(VCO)



2.V/C, 4.DEF, 5.VSM PRESET and 6.WB PRESET

- ① 2, 4, 5, 6 Key Select one from **2. V/C**, **4. DEF**, **5. VSM PRESET** and **6.WB PRESET**.
- ② MENU UP/DOWN Key Select setting items.
- ③ MENU LEFT/RIGHT Set (adjust) the setting values of the setting items.
- ④ OK Key Memorize the setting value.
(Before storing the setting values in memory, do not press the CH, TV, POWER ON / OFF key - if you do, the values will not be stored in memory.)
- ⑤ DISPLAY Key Return to the **SERVICE MENU** screen.

SUB MENU 2.V/C

V/C	AUTO PAL	COOL
1. CUT OFF	(R) - ***	
	(G) - ***	
	(B) - ***	
<div style="display: flex; justify-content: space-around;"> ◀▶ (OK) :STORE (DISP) :EXIT </div>		

SUB MENU 4.DEF

DEF	REGULAR	**Hz
1. V-SHIFT		***
		(**)
<div style="display: flex; justify-content: space-around;"> ◀▶ (OK) :STORE (DISP) :EXIT </div>		

SUB MENU 5.VSM PRESET

VSM PRESET	STANDARD
1.BRIGHT	***
<div style="display: flex; justify-content: space-around;"> ◀▶ (OK) :STORE (DISP) :EXIT </div>	

SUB MENU 6.WB PRESET

WB PRESET	COOL
1.R DRIVE	***
<div style="display: flex; justify-content: space-around;"> ◀▶ (OK) :STORE (DISP) :EXIT </div>	

3.AUDIO and 7.AUTO PROGRAM

- 3.AUDIO (**Do not adjust**) It is no requirement to adjustment.
- 7.AUTO PROGRAM (**Do not adjust**) AUTO PROGRAM contents displays on the screen. Need not for service.

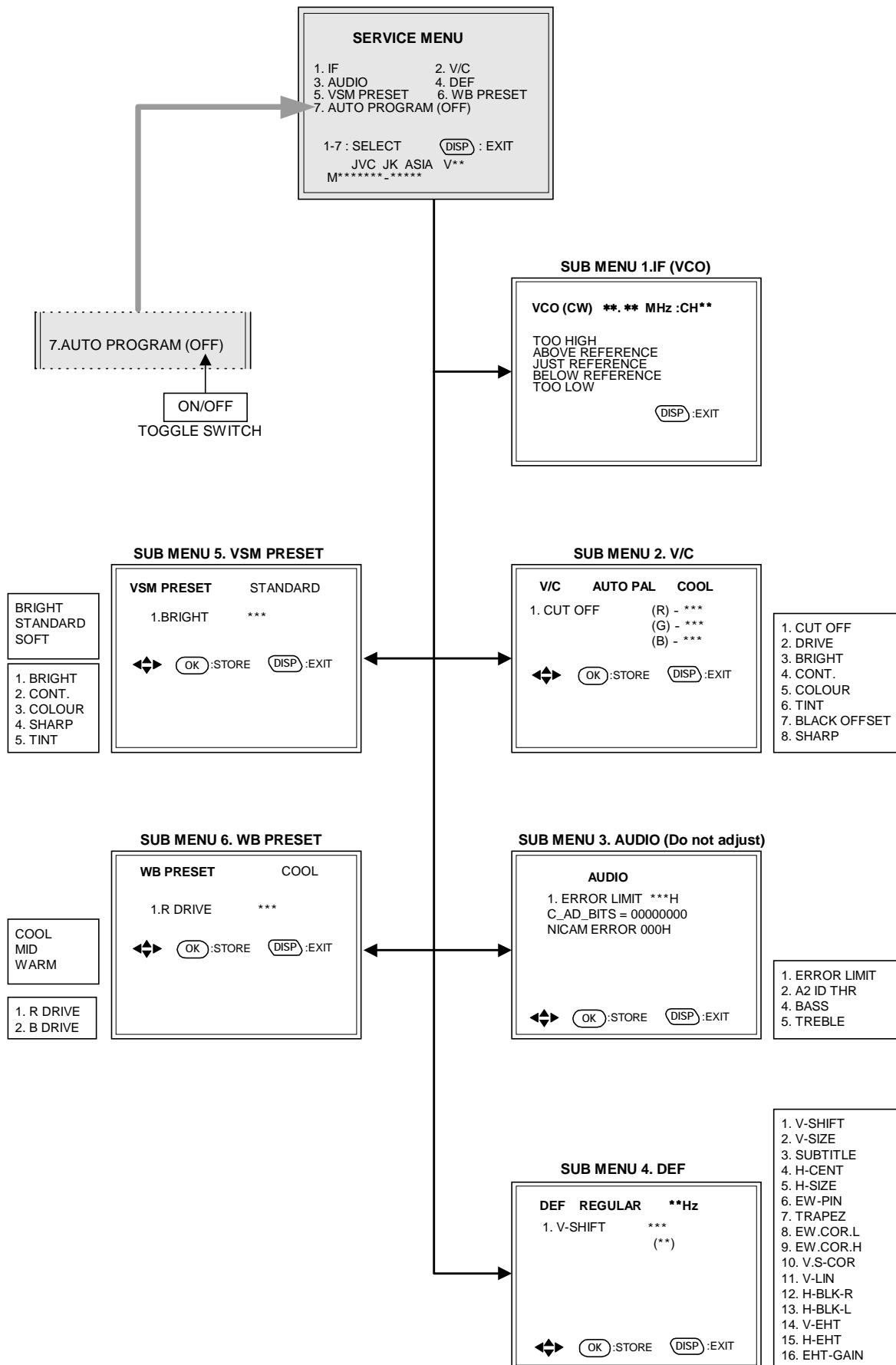
SUB MENU 3.AUDIO

AUDIO
1. ERROR LIMIT ***H
C_AD_BITS = 00000000
NICAM ERROR ***H
<div style="display: flex; justify-content: space-around;"> ◀▶ (OK) :STORE (DISP) :EXIT </div>

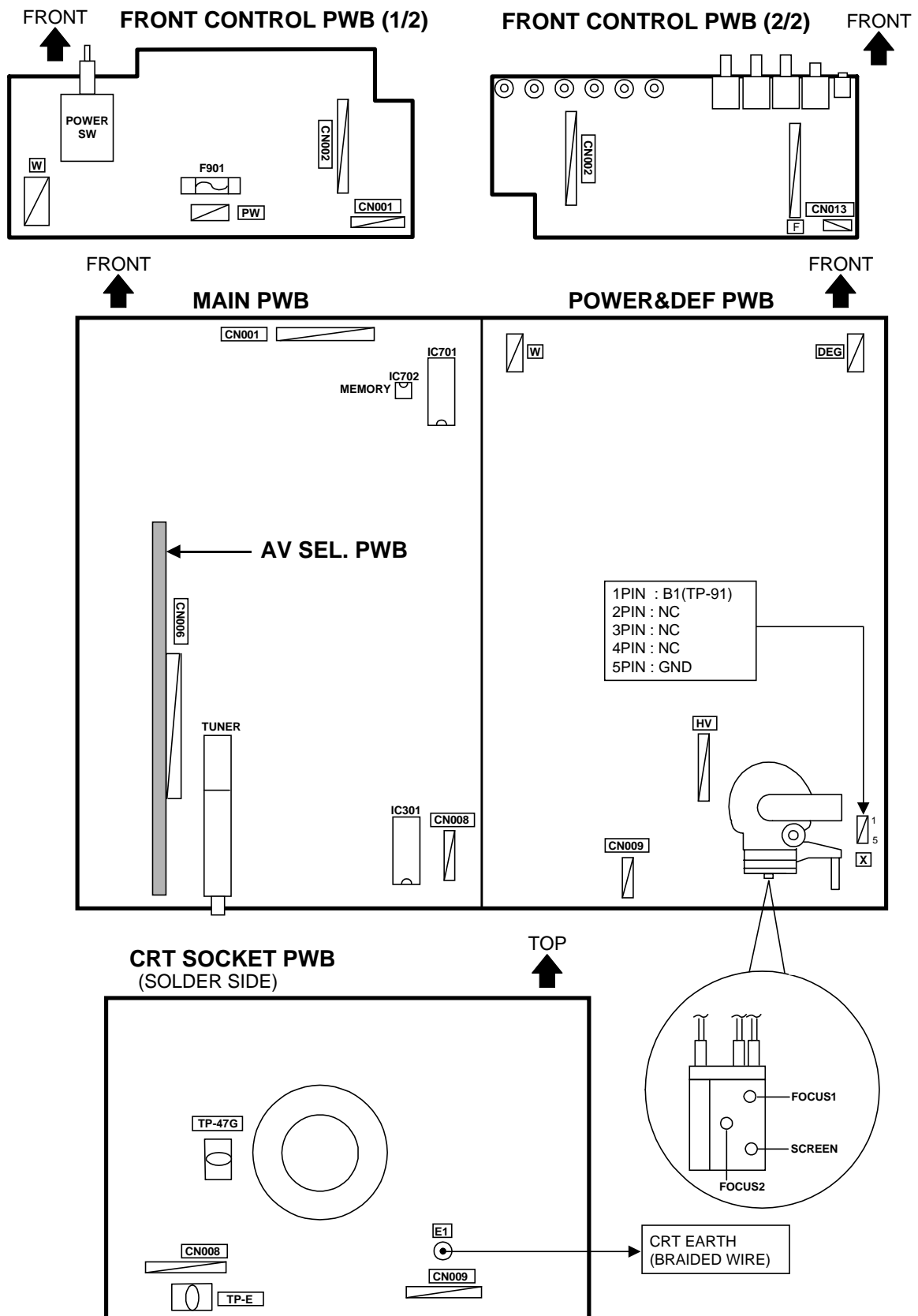
[Exit from SERVICE MENU]

When complete the adjustment work, press the **DISPLAY** key to return to the main SERVICE MENU. And then press the **DISPLAY** key again, return to the normal screen.

SERVICE MENU FLOW CHART



ADJUSTMENT LOCATIONS



ADJUSTMENTS

CHECK ITEMS BEFORE ADJUSTMENTS

Item	Measuring instrument	Test point	Adjustment part	Description
Check of B1 Power Supply	Signal generator DC voltmeter	TP-91(B1) TP-E(↱) [X Connector on POWER & DEF PWB]		<ol style="list-style-type: none"> 1. Input the black and white signal. 2. Select 2. V/C from the SERVICE MENU. 3. Select 1. CUT OFF with MENU UP / DOWN key. 4. Show one horizontal line by pressing the 1 key. 5. Turn the SCREEN VR until not to display the one horizontal line. 6. Connect the DC voltmeter to TP-91(B1) and TP-E(↱). 7. Make sure that the voltage is $DC134.0 \pm 2.0V$. 8. Readjust the SCREEN VR to appear the horizontal line faintly, and cancel the horizontal line by pressing the 2 key.
Check of High Voltage	Signal generator High voltage meter	CRT anode		<ol style="list-style-type: none"> 1. Input the black and white signal. 2. Select 2. V/C from the SERVICE MENU. 3. Select 1. CUT OFF with MENU UP / DOWN key. 4. Show one horizontal line by pressing the 1 key. 5. Turn the SCREEN VR until not to display the one horizontal line. 6. Connect a High voltage meter to CRT ANODE. 7. Make sure that the voltage is $DC 32.0kV \pm 1.5kV$. 8. Readjust the SCREEN VR to appear the horizontal line faintly, and cancel the horizontal line by pressing 2 key.

FOCUS ADJUSTMENT

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of FOCUS	Signal generator		FOCUS 1 VR [In HVT]	<ol style="list-style-type: none"> 1. Input the cross-hatch signal. 2. By turning the FOCUS VR, adjust the picture so that the center horizontal line of the cross-hatch picture becomes thinnest. 3. Then turning the FOCUS VR, adjust the focus of the vertical line at most outside becomes as thin as possible. 4. Carry out adjustment by repeating the steps 2 and 3 above. 5. Make sure that when the screen is darkened, the lines remain in good focus.

CHECK OF IF CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of VCO	Remote control unit		1.IF	<ul style="list-style-type: none"> ● Under normal conditions, it is no adjustment required. ● It must not adjust without broadcast signal. <ol style="list-style-type: none"> 1. Select 1.IF from the SERVICE MENU, then displays the VCO adjustment screen. 2. Check the characters colour of the JUST REFERENCE displayed to yellow.

VCO (CW) **.* MHz :CH**

TOO HIGH
ABOVE REFERENCE
JUST REFERENCE ←
BELOW REFERENCE
TOO LOW

YELLOW

(DISP) :EXIT

SETTING OF VSM PRESET

Item	Measuring instrument	Test point	Adjustment part	Description
Setting of VSM PRESET	Remote control unit		5.VSM PRESET 1. BRIGHT 2. CONT. 3. COLOUR 4. SHARP 5. TINT	<ol style="list-style-type: none"> 1. Select 5.VSM PRESET from the SERVICE MENU. 2. Select PICTURE MODE to BRIGHT by the remote control unit. 3. Adjust the MENU UP/DOWN and LEFT/RIGHT key to bring the set values of 1.BRIGHT~5. TINT to the values shown in the table. 4. Press the OK key and memorize the set value. 5. Respectively select the PICTURE MODE to STANDARD and SOFT, and make similar setting as in 3 above. 6. Press the OK key and memorize the set value.

[INITIAL SETTING VALUES OF VSM PRESET]

ITEM \ PICTURE MODE	BRIGHT	STANDARD	SOFT
1. BRIGHT	+0	+0	+0
2. CONT	+17	+0	-4
3. COLOUR	+0	+0	-1
4. SHARP	+0	+0	-3
5. TINT	+0	+0	+0

SETTING OF WHITE BALANCE PRESET

Item	Measuring instrument	Test point	Adjustment part	Description											
Setting of WHITE BALANCE PRESET	Remote control unit		6.WB PRESET 1. R DRIVE 2. B DRIVE	1. Select 6.WB PRESET from the SERVICE MENU. 2. Select COOL in the user setting MENU. 3. Adjust the MENU UP/DOWN and LEFT/RIGHT key to bring the set values of 1.R DRIVE ~2.B DRIVE to the values shown in the table. 4. Press the OK key and memorize the set value. 5. Respectively select the WHITE BALANCE MODE to MID and WARM, and make similar adjustment as in 3 above. 6. Press the OK key and memorize the set value.											
				[INITIAL SETTING VALUES OF WHITE BALANCE PRESET] <table border="1"> <thead> <tr> <th>ITEM</th><th>WHITE BALANCE</th><th>COOL</th><th>MID</th><th>WARM</th></tr> </thead> <tbody> <tr> <td>1. R DRIVE</td><td></td><td>-0</td><td>-3</td><td>+26</td></tr> <tr> <td>2. B DRIVE</td><td></td><td>+0</td><td>-23</td><td>-27</td></tr> </tbody> </table>	ITEM	WHITE BALANCE	COOL	MID	WARM	1. R DRIVE		-0	-3	+26	2. B DRIVE
ITEM	WHITE BALANCE	COOL	MID	WARM											
1. R DRIVE		-0	-3	+26											
2. B DRIVE		+0	-23	-27											

VIDEO / CHROMA CIRCUIT ADJUSTMENT

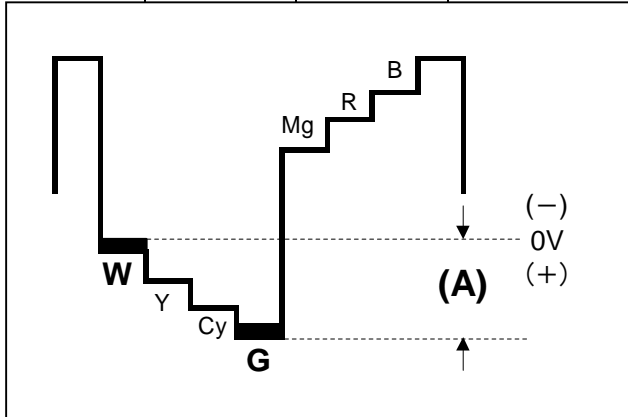
The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values.
 The setting values which adjust the screen to the optimum condition can be different from the initial setting values.

CONTENTS		PAL	SECAM	NTSC3.58	NTSC4.43
CUTOFF	R	-60			
	G	-60			
	B	-60			
DRIVE	R	+0			
	B	+0			
BRIGHT	TV	0	+3	+1	—
	VIDEO	-1	+2	+2	—
	COMPONENT	-2			
CONT	TV	-15	0	0	—
	VIDEO	-3	0	+1	—
	COMPONENT	+2			
COLOUR	TV/VIDEO	+10	+18	+0	0
	COMPONENT	+8		+17	
TINT	TV	+6	+6	+7	0
	VIDEO	+6	+6	+14	0
	COMPONENT	+6		+4	
BLACK OFFSET	R-Y	0			
	B-Y	0			
SHARP	TV	-12	-13	-12	—
	VIDEO	-8	-7	-9	—
	COMPONENT	-10			

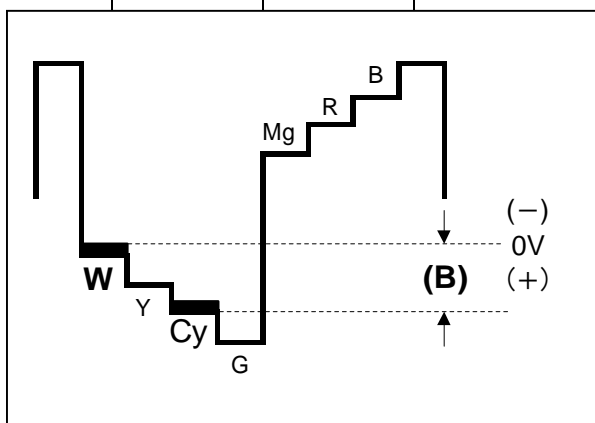
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of WHITE BALANCE (Low Light)	Signal generator Remote control unit		1.CUT OFF R, G, B SCREEN VR [In HVT]	<ul style="list-style-type: none"> ● Set the PICTURE MODE to STANDARD. 1. Set the WHITE BALANCE to COOL. 2. Receive a black and white signal (colour off). 3. Select 2. V/C from the SERVICE MENU. 4. Select 1.CUT OFF with the MENU UP/DOWN key. 5. Show one horizontal line with the 1 key. 6. Gradually turn the SCREEN VR from the left end to the right direction to bring one of the red, green or blue colour faintly visible. 7. Press 4~9 key, and bring out the other 2 colours and make one horizontal line visible in white. 8. Turn the SCREEN VR and bring one white horizontal line faintly visible. 9. Press 2 key, turn off one horizontal line. 10. Press the OK key and memorize the set value.
Adjustment of WHITE BALANCE (High Light)	Signal generator Remote control unit		2.DRIVE R, B	<ul style="list-style-type: none"> ● The adjustment for Low Light WHITE BALANCE should be finished. ● Set the PICTURE MODE to STANDARD. 1. Set the WHITE BALANCE to COOL. 2. Input the black and white signal (colour off). 3. Select 2.V/C from the SERVICE MENU. 4. Select 2.DRIVE with the MENU UP/DOWN key. 5. Change the screen colour to white with 4 key or 7 key (drive of red), 6 key or 9 key (drive of blue). 6. Press the OK key, and memorize the set values.

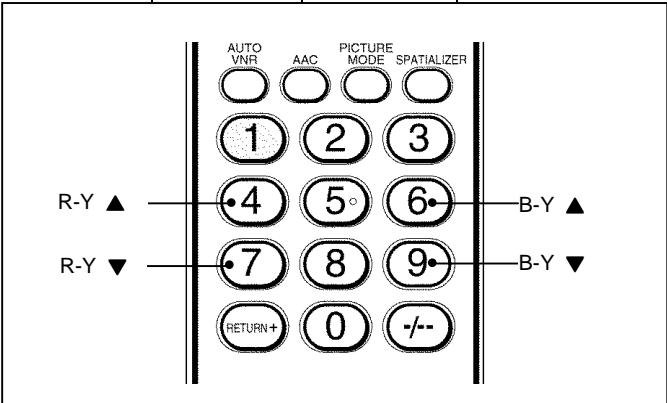
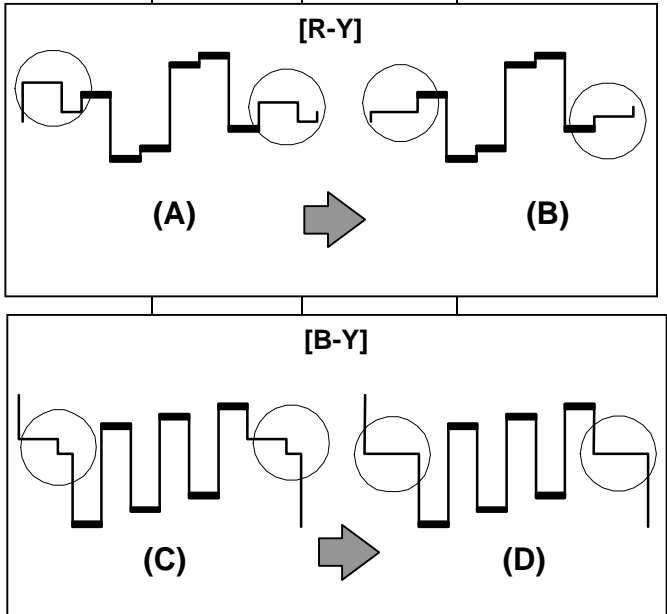
Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB BRIGHT	Remote control unit		3.BRIGHT	<ol style="list-style-type: none"> 1. Receive any broadcast. 2. Select 2.V/C from the SERVICE MENU. 3. Select 3.BRIGHT with the MENU UP/DOWN key. 4. Set the initial setting value with the MENU LEFT/RIGHT key. 5. If the brightness is not the best with the initial setting value, make fine adjustment until you get the best brightness. 6. Press the OK key and memorize the set value.
Adjustment of SUB CONTRAST	Remote control unit		4.CONT.	<ol style="list-style-type: none"> 1. Receive any broadcast. 2. Select 2.V/C from the SERVICE MENU. 3. Select 4.CONT with the MENU UP/DOWN key. 4. Set the initial setting value with the MENU LEFT/RIGHT key. 5. If the contrast is not the best with the initial setting value, make fine adjustment until you get the best contrast. 6. Press the OK key and memorize the set value.
Adjustment of SUB COLOUR I	Remote control unit		5.COLOUR	[Adjustment method without measuring instrument]
			PAL COLOUR	<ol style="list-style-type: none"> 1. Receive the PAL broadcast. 2. Select 2.V/C from the SERVICE MENU. 3. Select 5.COLOUR with the MENU UP/DOWN key. 4. Set the initial setting value for PAL COLOUR with the MENU LEFT/RIGHT key. 5. If the colour is not the best with the initial set value, make fine adjustment until you get the best colour. 6. Press the OK key and memorize the set value.
			SECAM COLOUR	<ol style="list-style-type: none"> 1. Receive the SECAM broadcast. 2. Select 2.V/C from the SERVICE MENU. 3. Select 5.COLOUR with the MENU UP/DOWN key. 4. Set the initial setting value for SECAM COLOUR with the MENU LEFT/RIGHT key. 5. If the colour is not the best with the initial set value, make fine adjustment until you get the best colour. 6. Press the OK key and memorize the set value.
			NTSC 3.58 COLOUR	<ol style="list-style-type: none"> 1. Receive the NTSC 3.58MHz broadcast. 2. Make similar fine adjustment of NTSC 3.58 COLOUR in the same manner as for above.
			NTSC 4.43 COLOUR	<ol style="list-style-type: none"> 1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB COLOUR II	Signal generator Oscilloscope Remote control unit	TP-47G TP-E(↗) [CRT SOCKET PWB]	5.COLOUR	[Adjustment method using measuring instrument]
			PAL COLOUR	<ol style="list-style-type: none"> 1. Input the PAL full field colour bar signal (with 75% white). 2. Select 2.V/C from the SERVICE MENU. 3. Select 5.COLOUR with the MENU UP/DOWN key. 4. Set the initial setting value of PAL COLOUR with the MENU LEFT/RIGHT key. 5. Connect the oscilloscope between TP-47G and TP-E(↗). 6. Adjust PAL COLOUR to bring the value of (A) in the illustration to -3V (Voltage difference between white (W) and green (G)). 7. Press the OK key and memorize the setting value.
			SECAM COLOUR	<ol style="list-style-type: none"> 1. Input the SECAM full field colour bar signal (with 75% white). 2. Set the initial setting value of SECAM COLOUR with the MENU LEFT/RIGHT key. 3. Adjust SECAM COLOUR to bring the value of (A) in the illustration to -5V (Voltage difference between white (W) and green (G)). 4. Press the OK key and memorize the setting value.
			NTSC COLOUR	<ol style="list-style-type: none"> 1. Input the NTSC 3.58MHz full field colour bar signal (with 75% white). 2. Set the initial setting value of NTSC 3.58 COLOUR with the MENU LEFT/RIGHT key. 3. Adjust NTSC 3.58 COLOUR and bring the value of (A) in the illustration to +3V (Voltage difference between white (W) and green (G)). 4. Press the OK key and memorize the setting value.
			NTSC 4.43 COLOUR	<ol style="list-style-type: none"> 1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.



Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB TINT I	Remote control unit		6.TINT	[Adjustment method without measuring instrument]
			NTSC 3.58 TINT	1. receive the NTSC 3.58MHz broadcast. 2. Select 2.V/C from the SERVICE MENU. 3. Select 6. TINT with the MENU UP/DOWN key. 4. Set the initial setting value of NTSC 3.58 TINT with the MENU LEFT/RIGHT key. 5. If you cannot get the best tint with the initial setting value, make fine adjustment until you get the best tint. 6. Press the OK key and memorize the set value.
			NTSC 4.43 TINT	1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.
Adjustment of SUB TINT II	Signal generator Oscilloscope Remote control unit	TP-47G TP-E(↗) [CRT SOCKET PWB]	6. TINT	[Adjustment method using measuring instrument]
			NTSC 3.58 TINT	1. Input the NTSC 3.58MHz full field colour bar signal (with 75% white). 2. Select 2.V/C from the SERVICE MENU. 3. Select 6. TINT with the MENU UP/DOWN key. 4. Set the initial setting value of NTSC 3.58 TINT with the MENU LEFT/RIGHT key. 5. Connect the oscilloscope between TP-47G and TP-E(↗) 6. Adjust NTSC 3.58 TINT to bring the value of (B) in the illustration to +4V (voltage difference between white (W) and cyan (Cy)). 7. Press the OK key and memorize the setting value
			NTSC 4.43 TINT	1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.



Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment Of SECAM BLACK OFFSET- I	Remote control unit		7. BLACK OFFSET (R-Y) (B-Y)	[Method of adjustment without measuring instrument]
				<ol style="list-style-type: none"> 1. Receive the SECAM broadcast. 2. Select 2. V/C from SERVICE MENU. 3. Select 7. BLACK OFFSET with the MENU UP / DOWN key. 4. Set the initial setting value for 7. BLACK OFFSET (R-Y) and (B-Y) with 4 and 7 or 6 and 9 keys of the remote control. 5. If the picture is not the best with the initial setting value, make fine adjustment until you get the best picture. 6. Press the OK key and memorise the set value.
				
Adjustment Of SECAM BLACK OFFSET- II	Signal generator Oscilloscope Remote control unit	35 PIN (R-Y) 36 PIN (B-Y) IC 1301 On MAIN PWB	7. BLACK OFFSET (R-Y) (B-Y)	[Method of adjustment using measuring instrument]
				<ol style="list-style-type: none"> 1. Input the SECAM full field colour bar signal (with 75% white). 2. Select 2. V/C from SERVICE MENU. 3. Select 7. BLACK OFFSET with the MENU UP / DOWN key. 4. Connect the oscilloscope between 35 pin of IC 1301 and TP-E. 5. By using 4 and 7 keys of the remote control, adjust the BLACK OFFSET (R-Y) so that it becomes the waveform changes from (A) to (B) shown in the figure. 6. Connect the oscilloscope between 36 pin of IC 1301 and TP-E. 7. By using 6 and 9 keys of the remote control, adjust the BLACK OFFSET (B-Y) so that it becomes the waveform changes from (C) to (D) shown in the figure. 8. If the picture is not the best with the adjusted picture, make fine adjustment until you get the best picture. 9. Press the OK key twice to return to the normal screen.
				

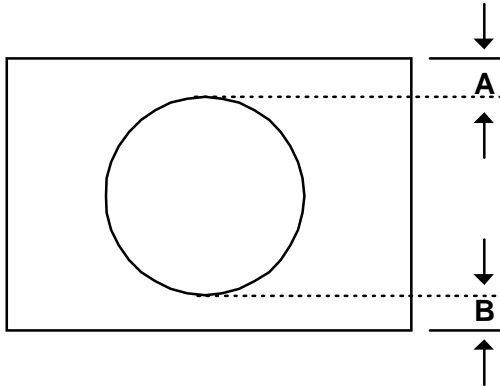
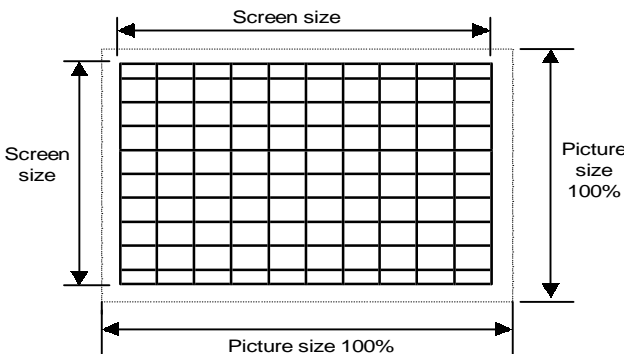
DEFLECTION CIRCUIT ADJUSTMENT

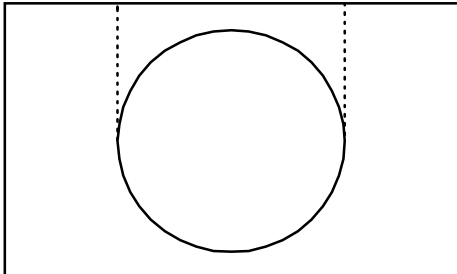
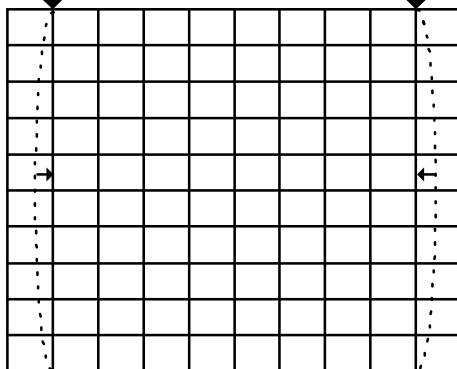
There are 3 modes of the adjustment (1) 50Hz mode (①REGULAR ②ZOOM ③16:9), (2) 60Hz mode (each aspect mode) depending upon the kind of signals (vertical frequency 50Hz / 60Hz).

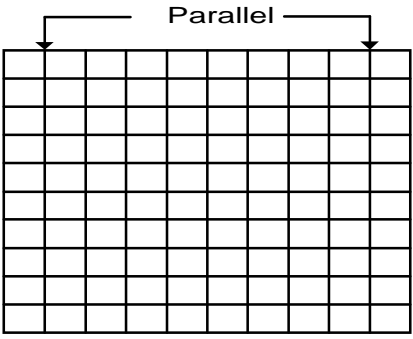
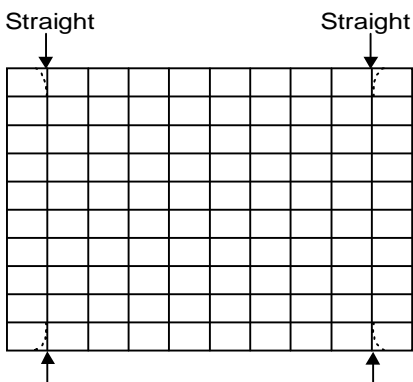
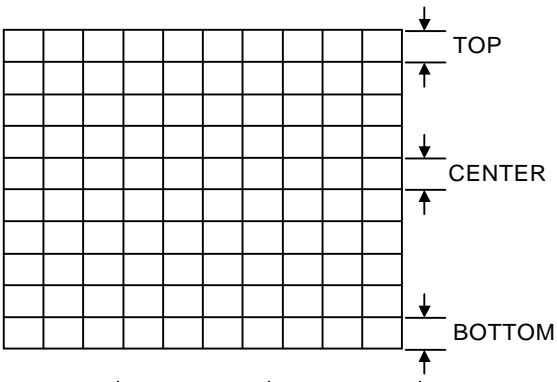
The adjustment using the remote control unit is made on the basis of the initial setting values.
The setting values which adjust the screen to the optimum condition can be different from the initial setting values.

DEFLECTION ADJUSTMENTS INITIAL SETTING VALUE

Setting item	Adjustment name	Initial setting value					
		REGULAR		ZOOM		16:9	
		50Hz	60Hz	50Hz	60Hz	50Hz	60Hz
1. V-SHIFT	Vertical center	-5	-1	0	+1	0	0
2. V-SIZE	Vertical height	+7	-1	+36	+35	-39	-39
3. SUBTITLE	Sub title	0	+1	-7	+7	0	0
4. H-CENT	Horizontal center	-10	+5	-1	-1	0	-1
5. H-SIZE	Horizontal size	-12	-1	-4	-4	0	-1
6. EW-PIN	Side pin correction	-3	+1	-4	-4	+2	0
7. TRAPEZ	Trapezoidal distortion correction	+4	-2	0	-1	0	+1
8. EW.COR.L	Corner pin correction Low side	-2	0	-1	-1	+1	+1
9. EW.COR.H	Corner pin correction High side	-2	0	0	0	+1	+1
10. V.S-COR	Vertical size correction	+13	0	0	0	0	0
11. V-LIN	Vertical Linearity	+2	-1	-1	-1	+1	0
12. H-BLK-R	Horizontal blanking right	0	0	0	0	+77	0
13. H-BLK-L	Horizontal blanking left	0	0	0	0	+2	0
14. V-EHT	V size correction level caused by EHT change	-4	0	0	0	0	0
15.H-EHT	H size correction level caused by EHT change	-3	0	0	-1	0	0
16.EHT-GAIN	Size correction gain caused by EHT change	+3	0	0	0	0	0

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of V-SHIFT	Signal generator Remote control unit		1.V- SHIFT	<ul style="list-style-type: none">●At first, select the ASPECT mode to REGULAR.1. Input the circle pattern signal.2. Select 4.DEF from the SERVICE MENU.3. Select 1.V-SHIFT with the MENU UP/DOWN key.4. Adjust V-SHIFT to make A = B.5. Press the OK key and memorize the set value.
				
Adjustment of V-SIZE	Signal generator Remote control unit		2.V-SIZE	<ul style="list-style-type: none">6. Input the cross-hatch signal.7. Select 2.V-SIZE and set the initial setting value.8. Adjust V-SIZE and make sure that the vertical screen size is in the bellow table.9. Press the OK key and memorize the set value. <ul style="list-style-type: none">●The value about 16:9 mode is the length of the 90% position in the screen size.
				
[VERTICAL SIZE]				
ASPECT MODE		REGULAR	ZOOM	16 : 9
V SIZE		92%	74%	295mm (90% position)

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of H.CENTER	Signal generator Remote control unit		4.H-CENT.	10. Input the circle pattern signal. 11. Select 4.H-CENT and set the initial setting value. 12. Adjust H-CENT to make C=D. 13. Press the OK key and memorize the set value.
<div><div><div>C</div><div>D</div></div></div>				
Adjustment of H.SIZE	Signal generator Remote control unit		5.H-SIZE	14. Input the circle pattern signal. 15. Select 5.H-SIZE and set the initial setting value. 16. Adjust H-SIZE and make sure that the horizontal screen size of the picture is in the bellow table. 17. Press the OK key and memorize the set value.
[HORIZONTAL SIZE]				
ASPECT MODE		REGULAR	ZOOM	16:9
H SIZE		92%	85%	92%
Adjustment of EW-PIN	Signal generator Remote control unit		6.EW-PIN	18. Select 6.EW-PIN and set the initial setting value 19. Adjust EW-PIN and make the 2nd vertical lines at the left and right edges of the screen straight. Also make sure that the 3rd vertical lines are straight. 20. Press the OK key and memorize the set value.
<div><div>Straight</div></div>				

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of TRAPEZ	Signal generator Remote control unit		7.TRAPEZ	<p>21. Input the cross-hatch signal.</p> <p>22. Select 7.TRAPEZ with the MENU UP/DOWN key.</p> <p>23. Set the initial setting value of TRAPEZ with the MENU LEFT/RIGHT key.</p> <p>24. Adjust TRAPEZ and bring the vertical lines at the right and left edges of the screen parallel .</p> <p>25. Press the OK key and memorize the set value.</p>
				
Adjustment of EW. COR. L/H	Signal generator Remote control unit		8.EW. COR. L 9.EW. COR. H	<p>26. Select 8.EW. COR. L with the MENU UP / DOWN key.</p> <p>27. Set the initial setting value of EW. COR. L with the MENU LEFT/RIGHT key.</p> <p>28. Adjust EW. COR. L, and bring the line to straight at the corner of the screen bottom.</p> <p>29. Select 9.EW. COR. H with the MENU UP / DOWN key.</p> <p>30. Set the initial setting value of EW. COR. H with the MENU LEFT/RIGHT key.</p> <p>31. Adjust EW. COR. H, and bring the line to straight at the corner of the screen top.</p> <p>32. Press the OK key and memorize the set value.</p>
				
Adjustment of V-S.CR & V.LINEARITY	Signal generator Remote control unit		10. V-S.CR 11. V-LIN	<p>● In case when the vertical linearity has been deteriorated remarkably, perform the following steps.</p> <p>33. Input the cross-hatch signal.</p> <p>34. Select 11.V-LIN with the MENU UP/DOWN key.</p> <p>35. Set the initial setting value of 11.V-LIN with the MENU LEFT/RIGHT key.</p> <p>36. Select 10.V-S.COR with the MENU UP / DOWN key.</p> <p>37. Set the initial setting value of 10.V-S.COR with the MENU LEFT/RIGHT key.</p> <p>38. Adjust 11.V-LIN and 10.V-S.COR so that the spaces of each line on top, center and bottom become uniform.</p>
				

Item	Measuring instrument	Test point	Adjustment part	Description
				At first the adjustment in 50Hz-REGULAR mode should be done, then the data for the other aspect mode is corrected in the respective value at the same time. And confirm the deflection adjustment initial setting value in 60Hz(NTSC Video mode) REGULAR mode. If the adjustment in 50Hz each aspect mode has been done and stored, the data for the same aspect modes in 60Hz is corrected in the respective value. Only the data for the other aspect mode in 60Hz is corrected for itself.

AUDIO CIRCUIT ADJUSTMENT

Do not adjust 3.AUDIO(1. ERROR LIMIT, 2. A2 ID THR, 3. BASS, 4. TREBLE) of the SERVICE MENU as it requires no adjustment.

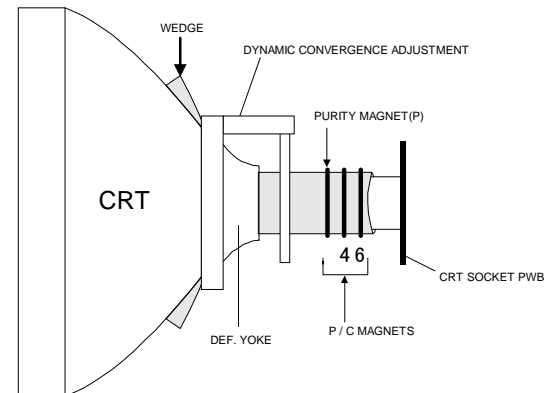
3. AUDIO [Do not adjust]

Setting item	Variable range	fixed value
1. ERROR LIMIT	000H ~ FF0H	100H
2. A2 ID THR	00H ~ FFH	14H
3. BASS	-17 ~ +17	+0
4. TREBLE	-17 ~ +17	+0

PURITY, CONVERGENCE ADJUSTMENT

PURITY ADJUSTMENT

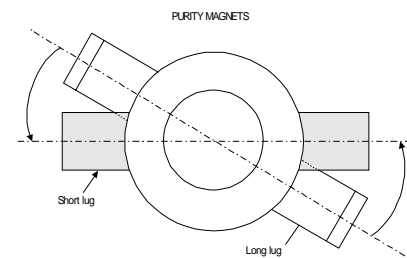
1. Demagnetize CRT with the demagnetizer.
2. Loosen the retainer screw of the deflection yoke.
3. Remove the wedges.
4. Input a green raster signal from the signal generator, and turn the screen to green raster.
5. Move the deflection yoke backward.
6. Bring the long lug of the purity magnets on the short lug and position them horizontally. (Fig.2)
7. Adjust the gap between two lugs so that the GREEN RASTER will come into the center of the screen. (Fig.3)
8. Move the deflection yoke forward, and fix the position of the deflection yoke so that the whole screen will become green.
9. Insert the wedge to the top side of the deflection yoke so that it will not move.
10. Input a crosshatch signal.
11. Verify that the screen is horizontal.
12. Input red and blue raster signals, and make sure that purity is properly adjusted.



P/C MAGNETS

P : PURITY MAGNET
 4 : 4 POLES (convergence magnets)
 6 : 6 POLES (convergence magnets)

Fig.1



Bring the long lug over the short lug and position them horizontally.

Fig.2

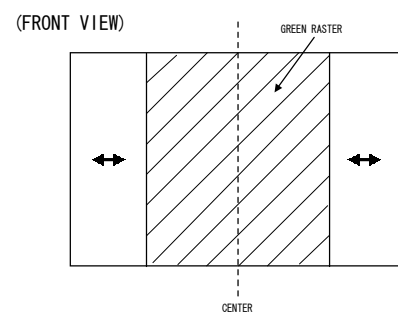


Fig.3

STATIC CONVERGENCE ADJUSTMENT

1. Input a crosshatch signal.
 2. Using 4-pole convergence magnets, overlap the red and blue lines in the center of the screen (Fig.1) and turn them to magenta (red/blue).
 3. Using 6-pole convergence magnets, overlap the magenta (red/blue) and green lines in the center of the screen and turn them to white.
 4. Repeat 2 and 3 above, and make best convergence.
- After adjustment, fix the wedge at the original position.
Fasten the retainer screw of the deflection yoke.
Fix the 6 magnets with glue.

DYNAMIC (periphery) CONVERGENCE ADJUSTMENT

After adjusting purity & static convergence.

1. Move the deflection yoke up and down to adjust the pin cushion distortion in the screen top and bottom. (See Fig. 2)
2. Move the deflection yoke left to right to overlap the lines in the periphery, and match the Y_v . (See Fig. 4)
3. Using the VR1 on the deflection yoke, match the Y_H (CROSS).
(See Fig. 3 and 6)
4. Using the VR2 on the deflection yoke, match the Y_H (BOW).
(See Fig. 3 and 6)
5. Repeat the steps 1 and 4 and obtain an optimum convergence.
6. Differential coil ADJUSTMENT.

In case where the horizontal lines of red and blue around the center of both sides of the picture as shown in Fig. 5, adjust the X_v difference by using the differential coil on the top of the deflection yoke (Fig. 6) so as to minimize the X_v difference.

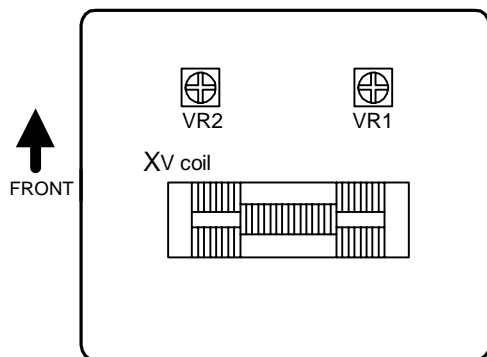


Fig. 6

(FRONT VIEW)

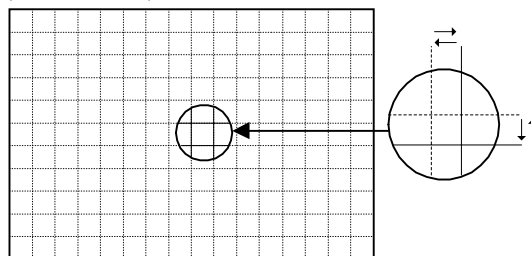


Fig. 1

(FRONT VIEW)

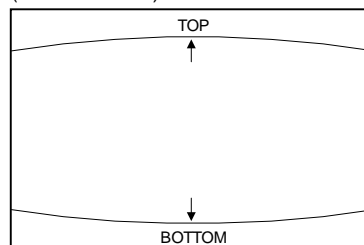


Fig. 2

(FRONT VIEW)

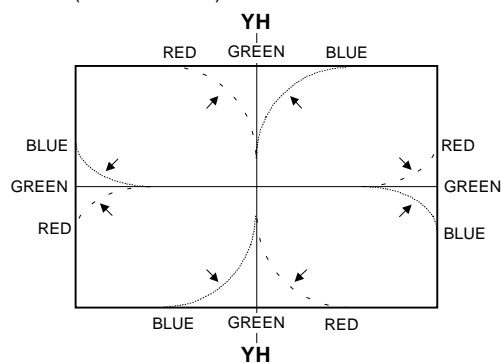


Fig. 3

(FRONT VIEW)

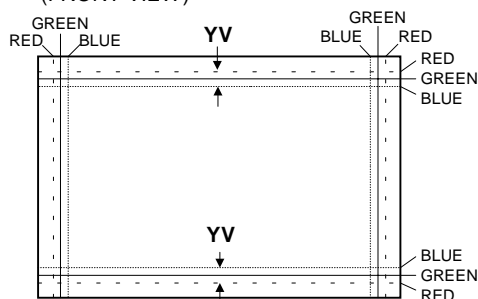


Fig. 4

(FRONT VIEW)

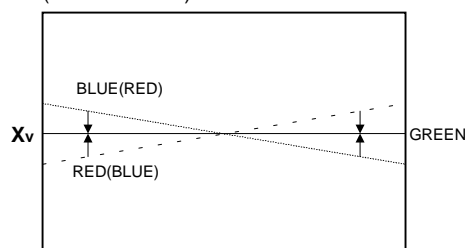


Fig. 5

CONTENTS

SEMICONDUCTOR SHAPES 2-2

BLOCK DIAGRAM 2-3

CIRCUIT DIAGRAMS

MAIN PWB CIRCUIT DIAGRAM 2-5

POWER & DEF PWB CIRCUIT DIAGRAM 2-9

CRT SOCKET PWB CIRCUIT DIAGRAM 2-11

FRONT CONTROL PWB CIRCUIT DIAGRAM 2-13

AV SEL. PWB CIRCUIT DIAGRAM 2-15

PATTERN DIAGRAMS

MAIN PWB PATTERN [SJK-1023A-H2] 2-17

POWER & DEF PWB PATTERN [SJK-2022A-H2] 2-19

CRT SOCKET PWB PATTERN [SJK-3011A-H2] 2-21

FRONT CONTROL PWB PATTERN [SJK-8011A-H2] 2-23

AV SEL. PWB PATTERN [SJK0S004A-H2] 2-25

SEMICONDUCTOR SHAPES

TRANSISTOR

BOTTOM VIEW	FRONT VIEW				TOP VIEW
					CHIP TR

IC

BOTTOM VIEW	FRONT VIEW			TOP VIEW

CHIP IC

TOP VIEW		

AV-29RX(c) STANDARD CIRCUIT DIAGRAM

NOTE ON USING CIRCUIT DIAGRAMS

1. SAFETY

The components identified by the△ symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

- (1)Input signal : Colour bar signal
- (2)Setting positions of each knob/button and variable resistor :Original setting position when shipped
- (3)Internal resistance of tester :DC 20k Ω/V
- (4)Oscilloscope sweeping time :H ⇒ 20μS/div
:V ⇒ 5mS/div
:Others ⇒ Sweeping time is specified
- (5)Voltage values :All DC voltage values
- * Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3.INDICATION OF PARTS SYMBOL [EXAMPLE]

- In the PW board :R1209→R209

4.INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

- Resistance value
No unit :[Ω]
K :[KΩ]
M :[MΩ]
- Rated allowable power
No indication :1/10[W]
Others :As specified
- Type
No indication :Carbon resistor
OMR :Oxide metal film resistor
MFR :Metal film resistor
MPR :Metal plate resistor
UNFR :Uninflammable resistor
FR :Fusible resistor

*Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

- Capacitance value
1 or higher :[pF]
less than 1 :[μF]
- Withstand voltage
No indication :DC50[V]
AC indicated :AC withstand voltage [V]
Others :DC withstand voltage [V]

*Electrolytic Capacitors

47/50[Example]:Capacitance value [μF]/withstand voltage[V]

- Type
No indication :Ceramic capacitor
MY :Mylar capacitor
MM :Metalized mylar capacitor
PP :Polypropylene capacitor
MPP :Metalized polypropylene capacitor
MF :Metalized film capacitor
TF :Thin film capacitor
BP :Bipolar electrolytic capacitor
TAN :Tantalum capacitor

(3)Coils

- No unit :[μH]
Others :As specified

(4)Power Supply

- :B1
 :12V
 :9V
 :5V

*Respective voltage values are indicated

(5)Test point

- :Test point
 :Only test point display

(6)Connecting method

- :Connector
 :Wrapping or soldering
 :Receptacle

(7)Ground symbol

- :LIVE side ground
 :ISOLATED(NEUTRAL) side ground
 :EARTH ground
 :DIGITAL ground

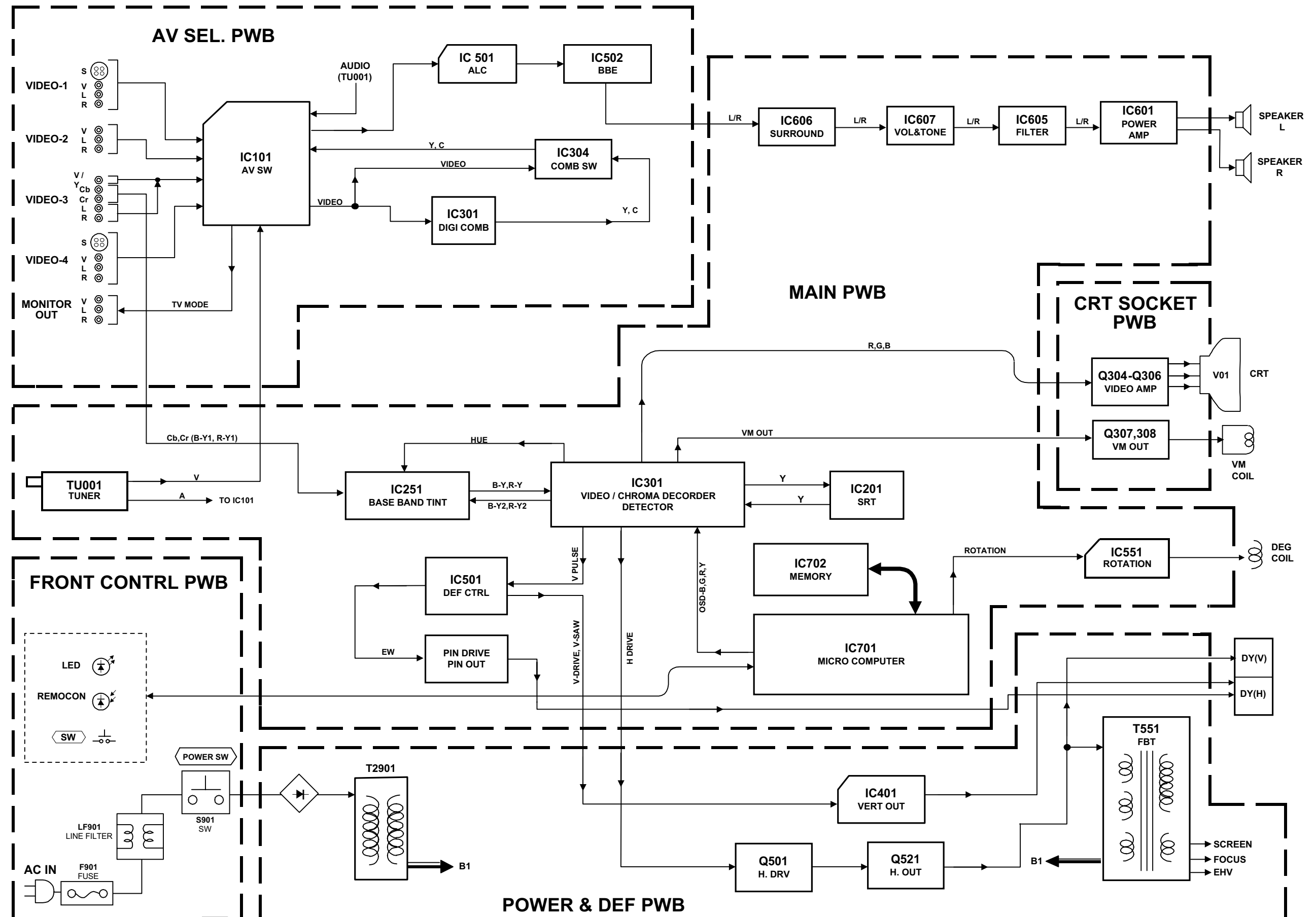
5.NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND and the ISOLATED(NEUTRAL) : (⌚) side GND. Therefore, care must be taken for the following points.

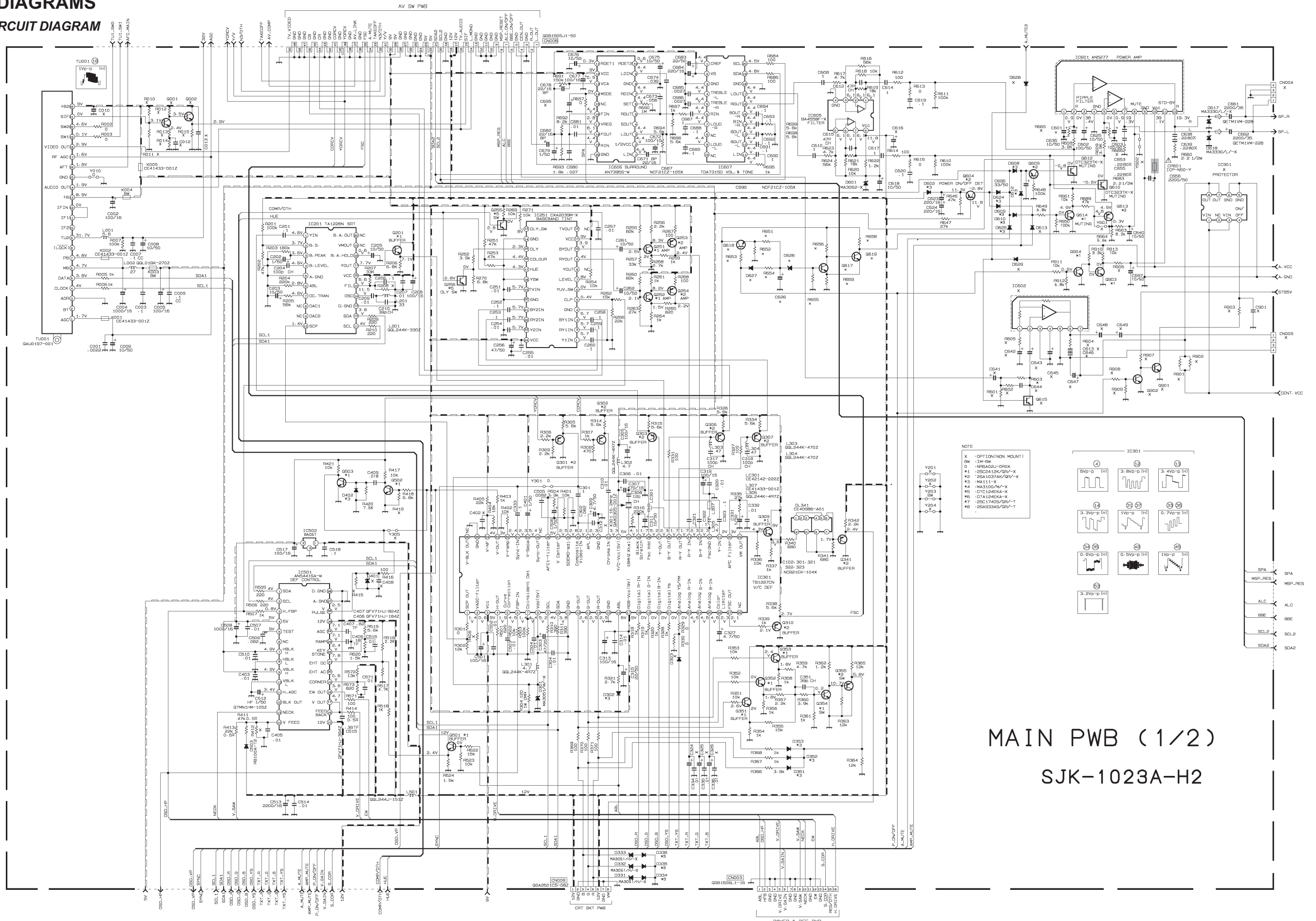
- (1)Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.
- (2)Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected , a fuse or any parts will be broken.

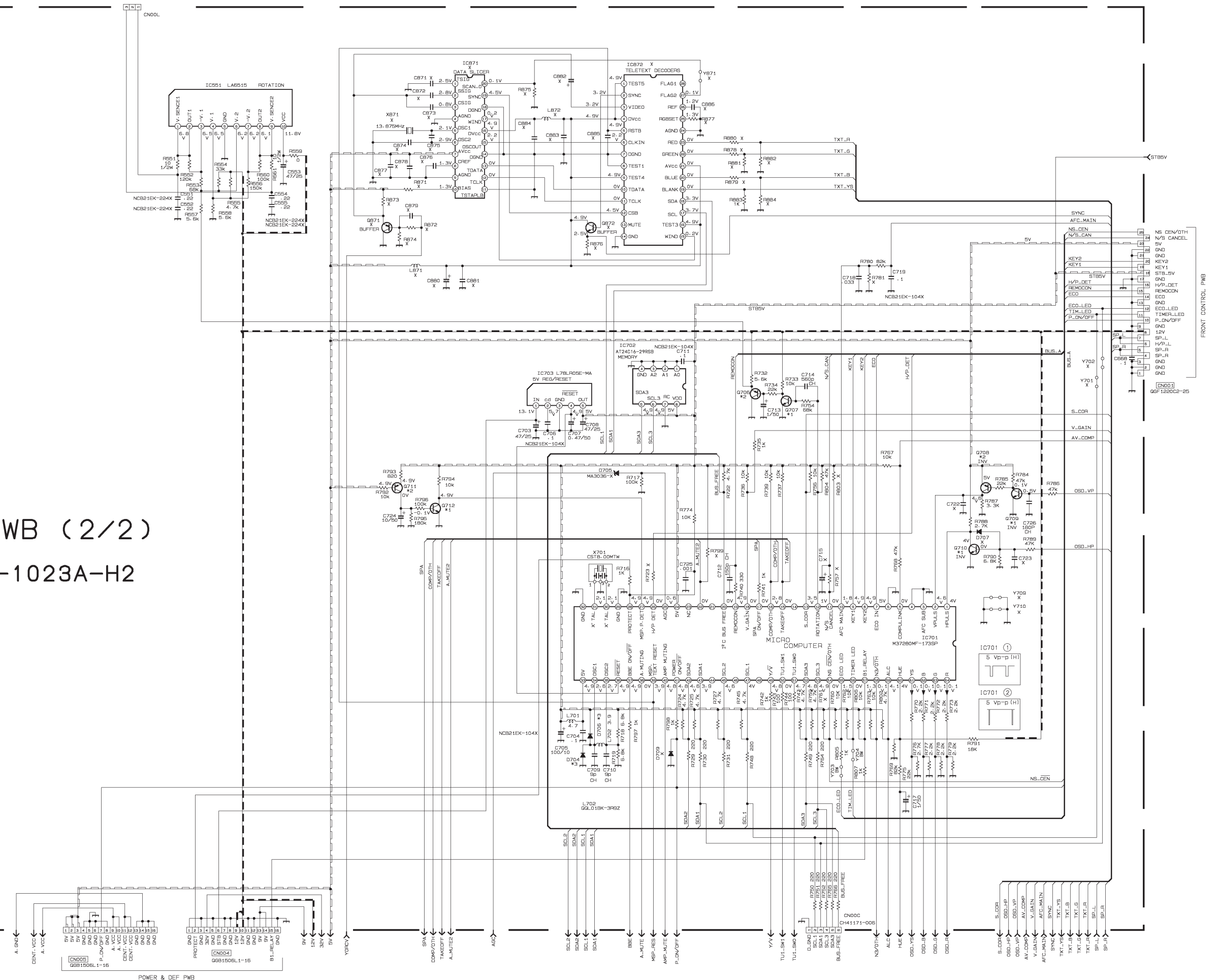
◇ Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

BLOCK DIAGRAM

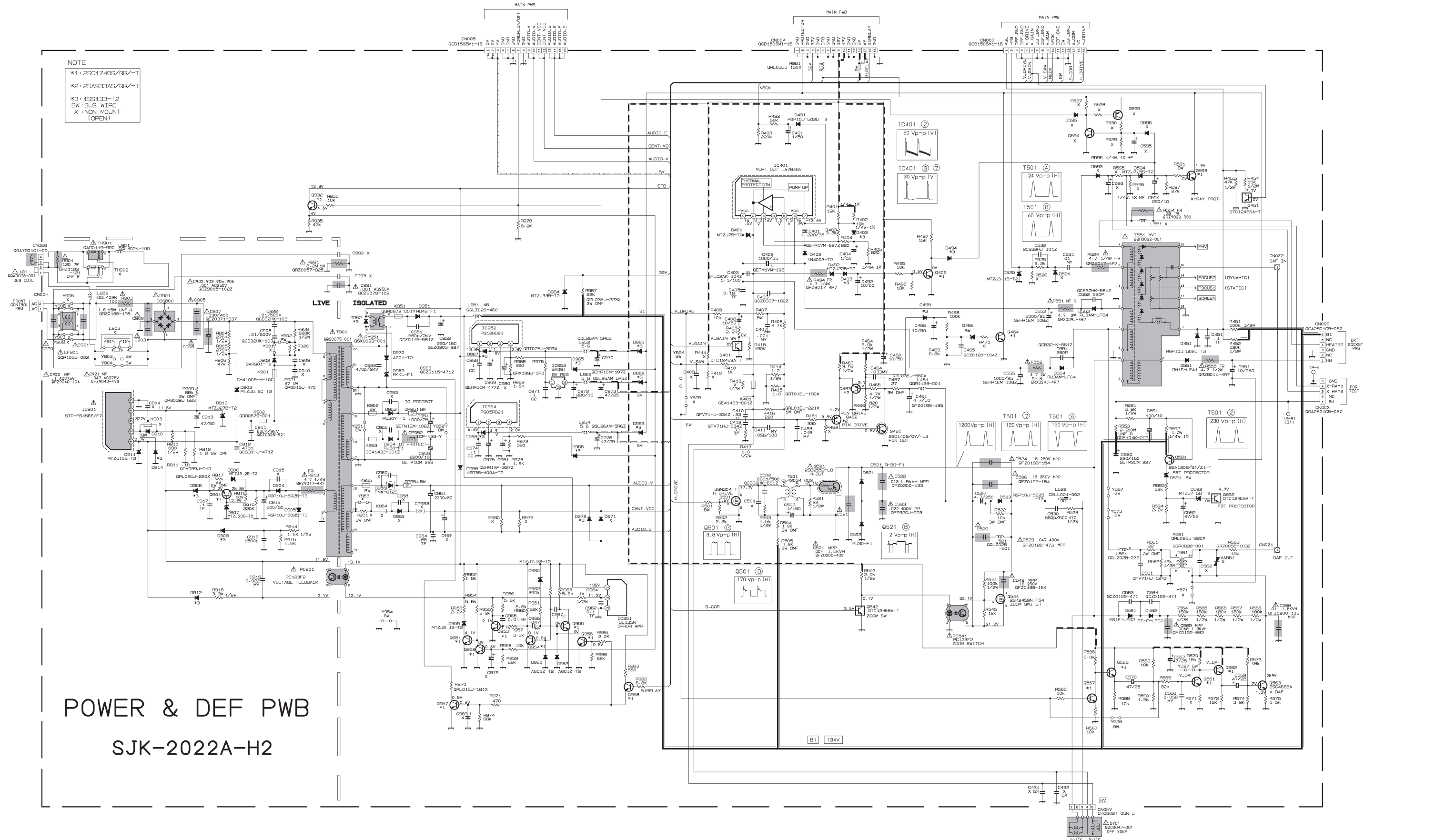


MAIN PWB CIRCUIT DIAGRAM

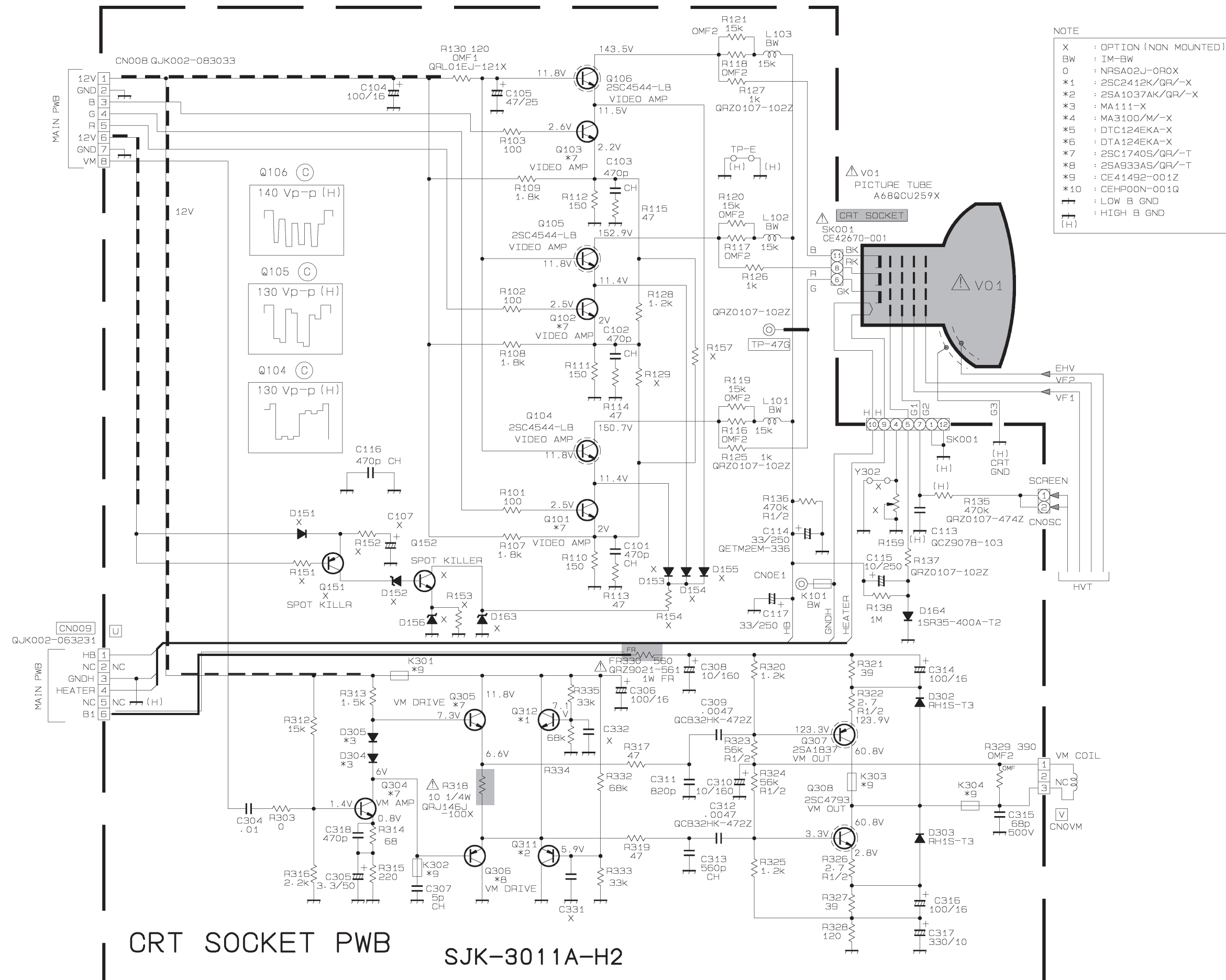




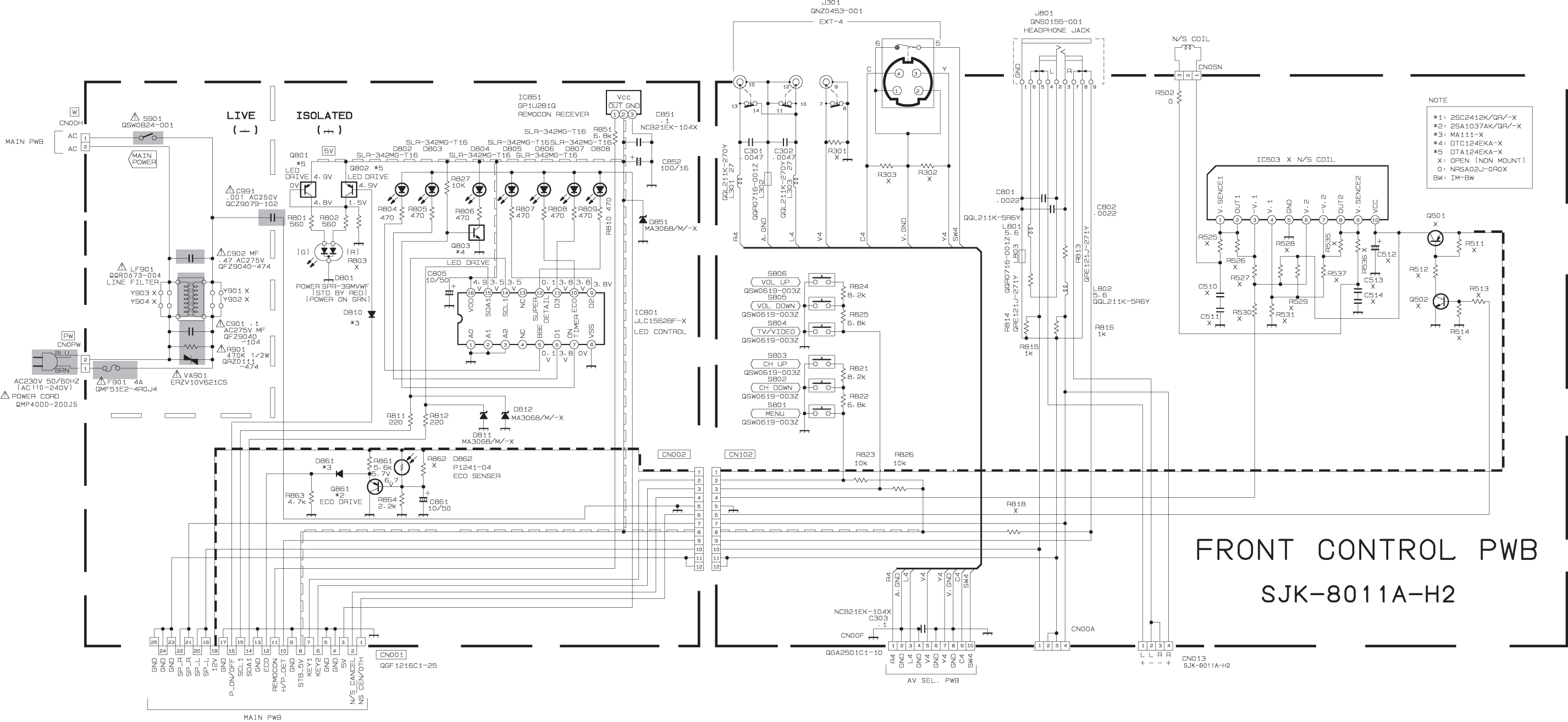
POWER & DEF PWB CIRCUIT DIAGRAM



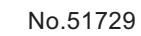
CRT SOCKET PWB CIRCUIT DIAGRAM



FRONT CONTROL PWB CIRCUIT DIAGRAM

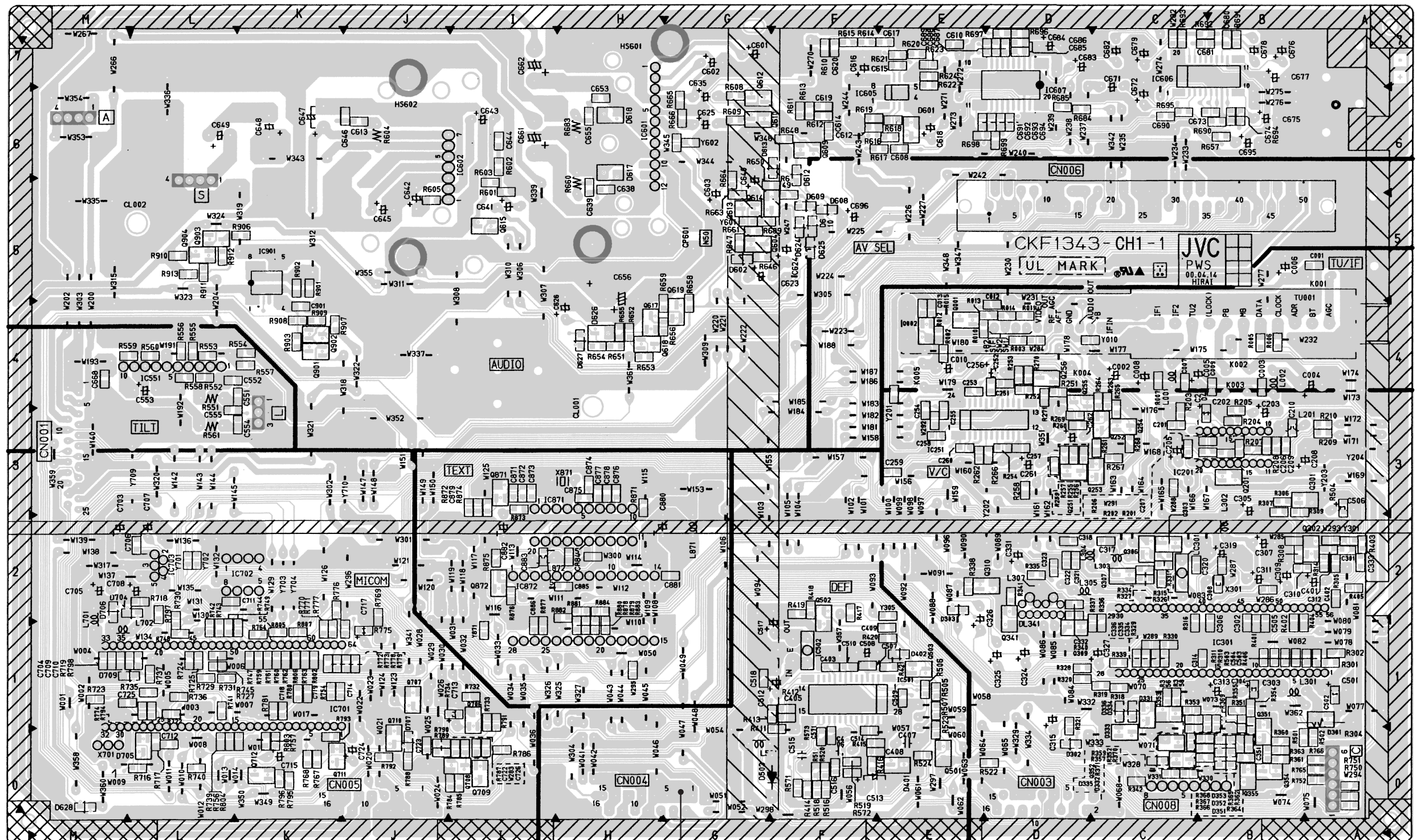


AV SEL. PWB
SJK0S004A-H2



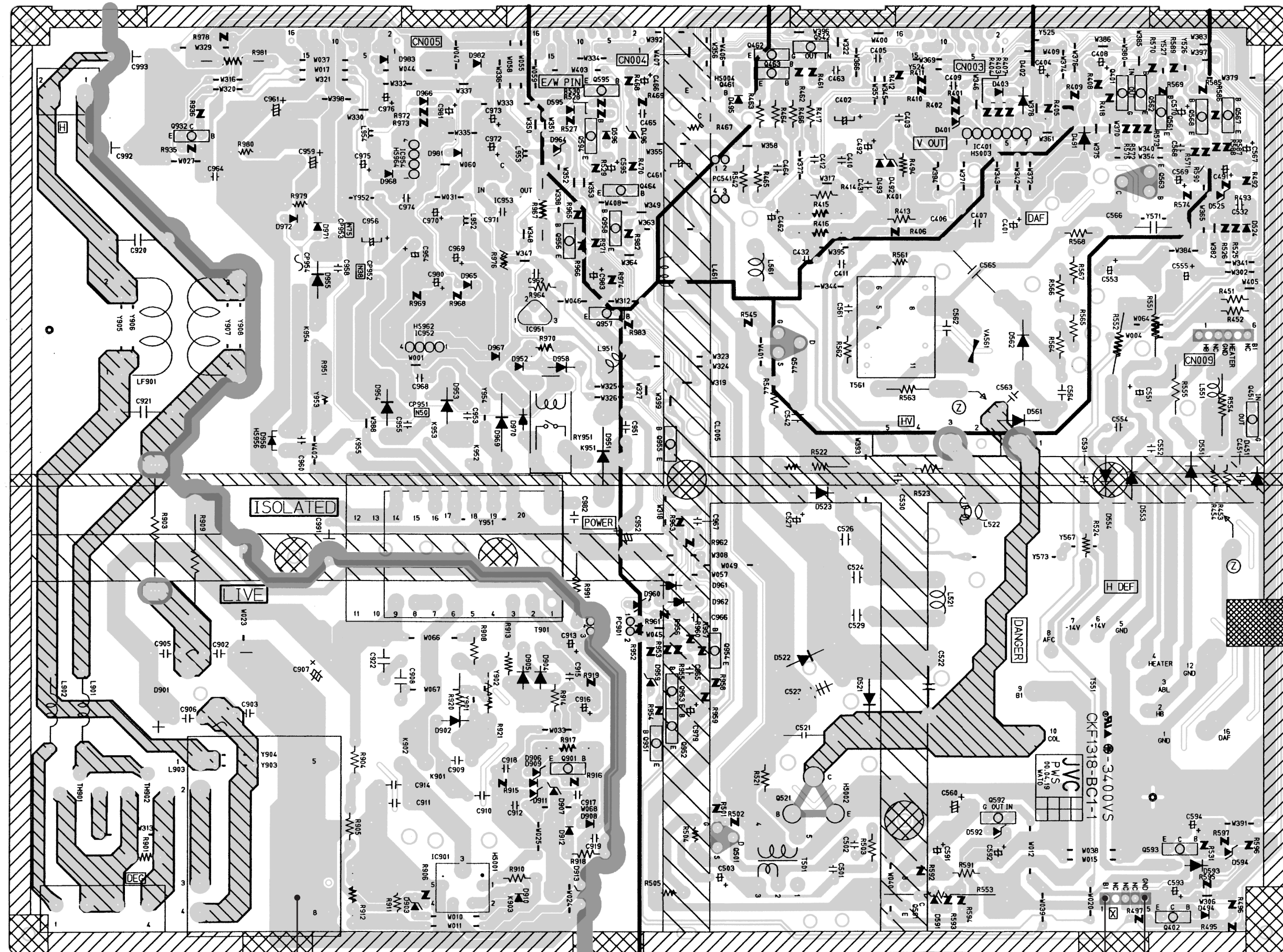
PATTERN DIAGRAMS

MAIN PWB PATTERN

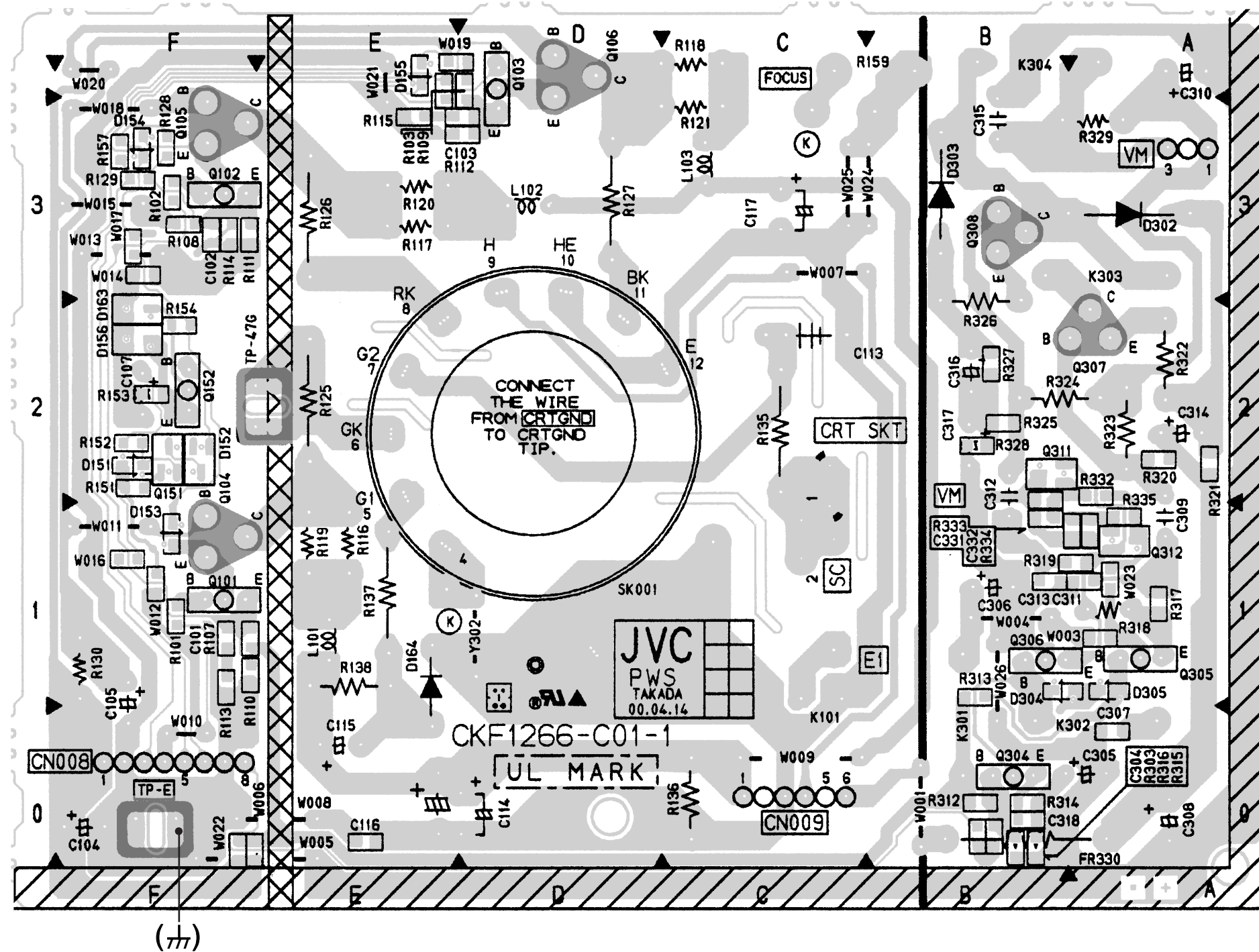
 FRONT



POWER & DEF PWB PATTERN

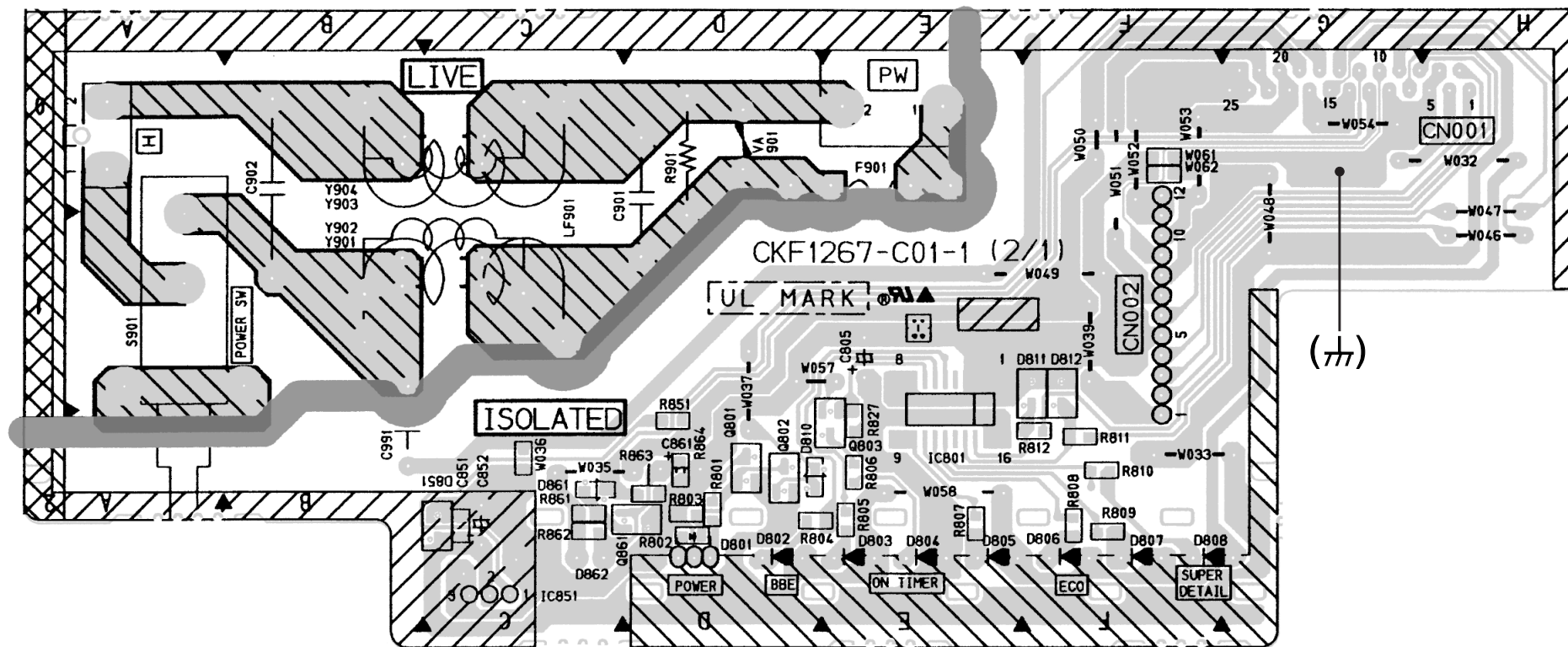
FRONT



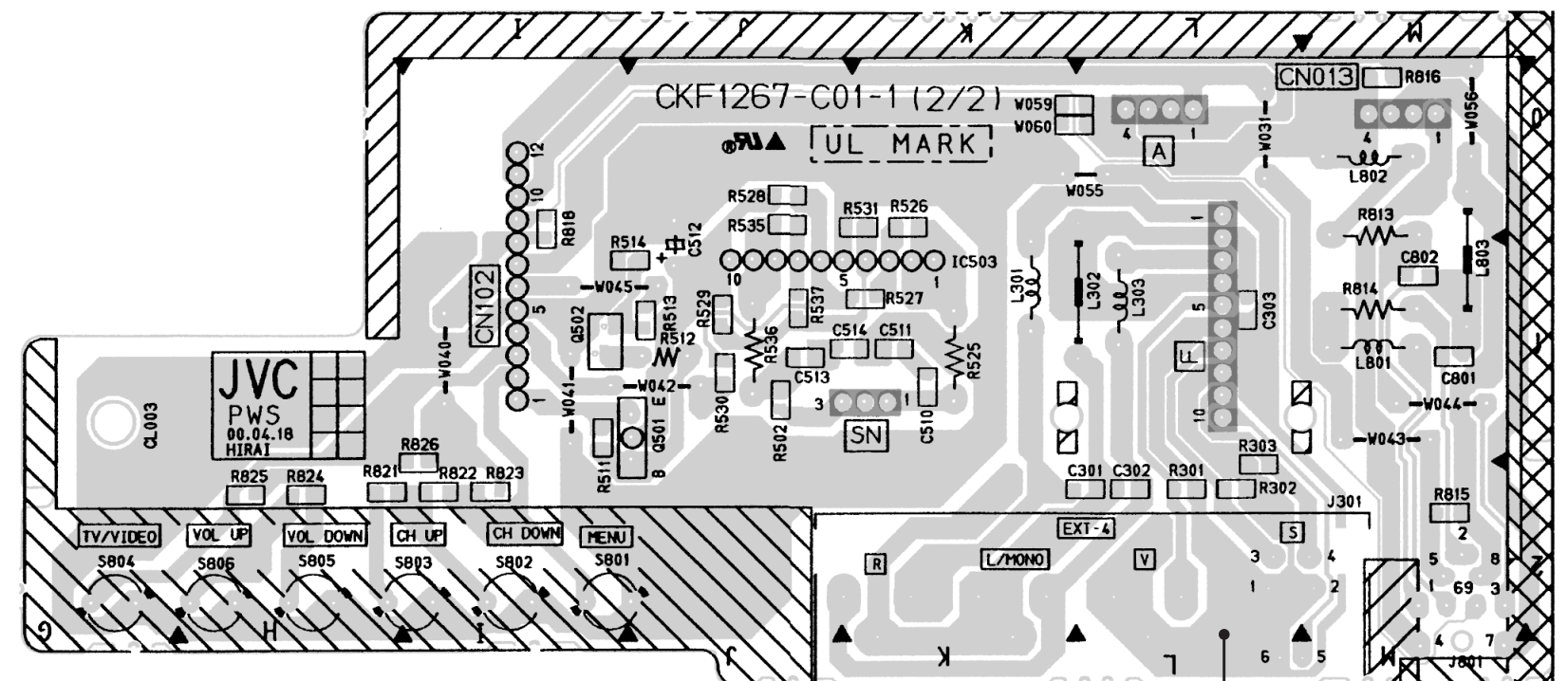
↑ TOP



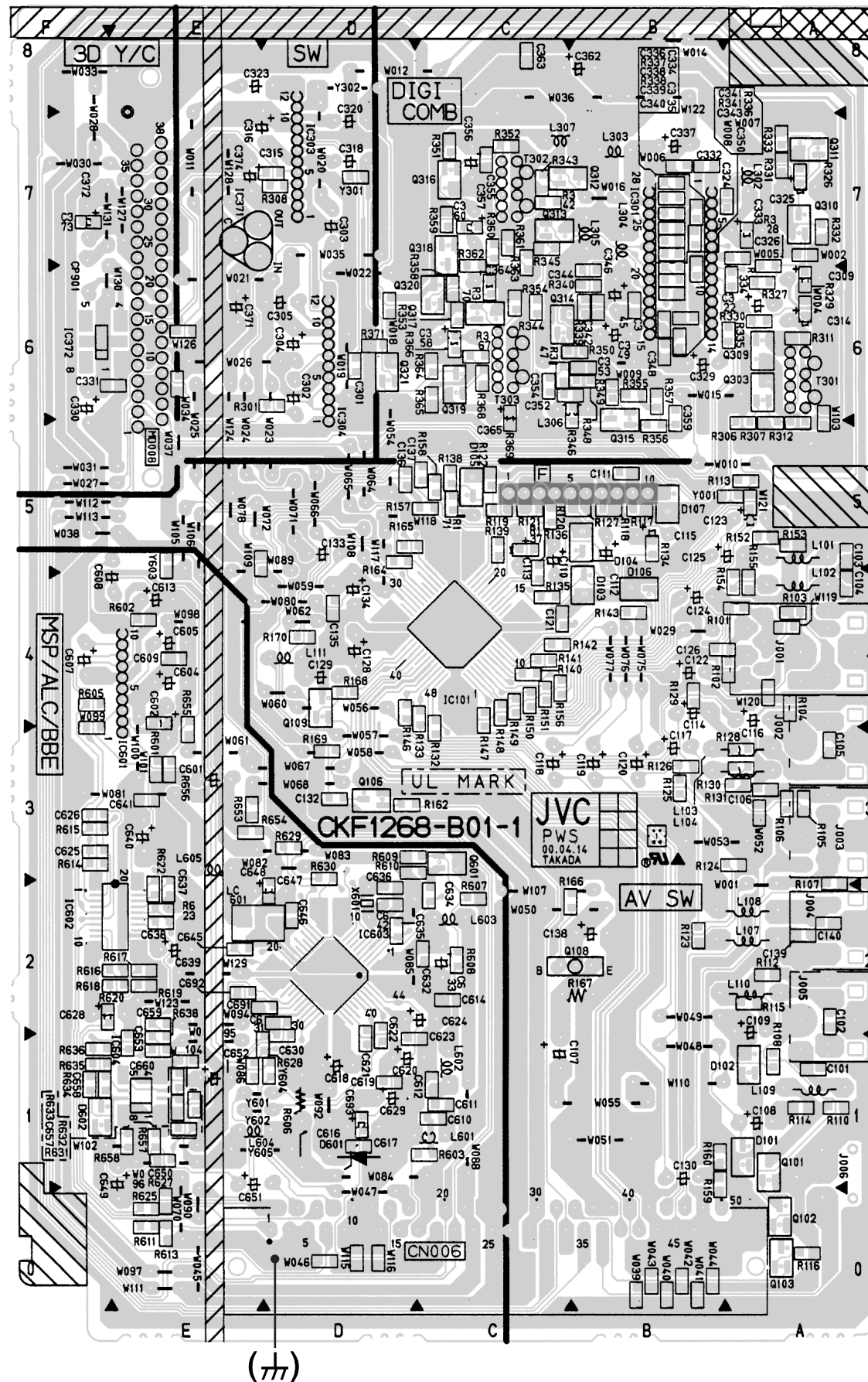
FRONT CONTROL PWB PATTERN



 **FRONT**




↓ FRONT



PARTS LIST

CAUTION

- The parts identified by the  symbol are important for the safety. Whenever replacing these parts, be sure to use specified ones to secure the safety .
- The parts not indicated in this Parts List and those which are filled with lines — in the Parts No. columns will not be supplied.
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied.

ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% -10%	+50% -10%	+80% -20%	+100% -0%

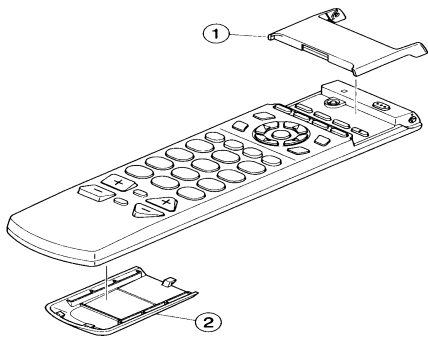
CONTENTS

■ USING PW BOARD & REMOTE CONTROL UNIT	34
■ REMOTE CONTROL UNIT PARTS LIST	35
■ EXPLODED VIEW PARTS LIST (I)	35
■ EXPLODED VIEW (I)	35
■ EXPLODED VIEW PARTS LIST (II)	36
■ EXPLODED VIEW (II)	37
■ PRINTED WIRING BOARD PARTS LIST	
● MAIN PW BOARD ASS'Y	38
● POWER & DEF PW BOARD ASS' Y	41
● CRT SOCKET PW BOARD ASS'Y	43
● FRONT CONTROL PW BOARD ASS'Y	44
● AV SEL. PW BOARD ASS'Y	45
■ PACKING	47
■ PACKING PARTS LIST	47

USING PW BOARD & REMOTE CONTROL UNIT

PWB ASS'Y / Model	AV-29RX(C)
MAIN PWB	SJK-1023A-H2
POWER & DEF PWB	SJK-2022A-H2
CRT SOCKET PWB	SJK-3011A-H2
FRONT CONTROL PWB	SJK-8011A-H2
AV SEL. PWB	SJK0S004A-H2
REMOTE CONTROL UNIT	RM-C113-2H

REMOTE CONTROL UNIT PARTS LIST [RM-C113-2H]

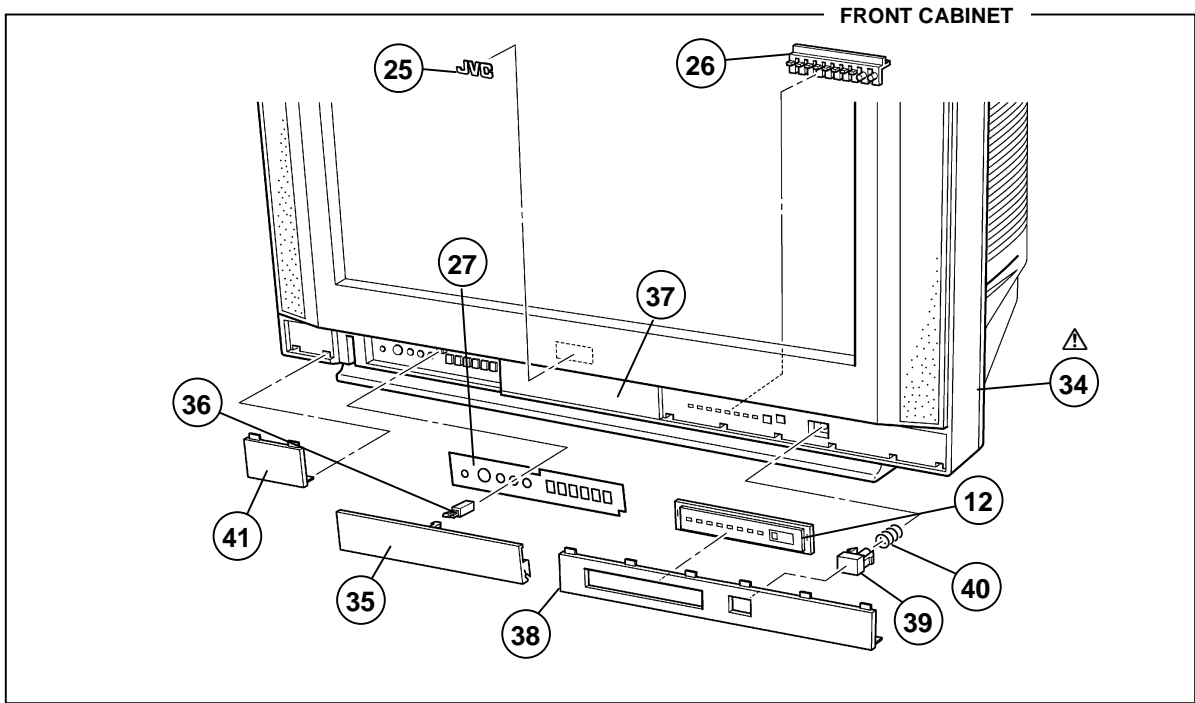


△	Ref.No.	Part No.	Part Name	Description
	1	UR52EC1264A	BATTERY COVER	
	2	UR52FT1265A	SLIDE COVER	

EXPLODED VIEW PARTS LIST (I)

△ Ref. No.	Part No.	Part Name	Description
12	LC31220-001B	INDICATE WINDOW	
25	CM48125-009	JVC MARK	
26	LC31169-001B-H	L. E. D. LENS	
27	LC31070-003A-H	OPERATION SHEET	
△ 34	LC10762-003B-H	FRONT CABINET	
35	LC20532-008B-H	DOOR	
36	CM48229-00A-C	DOOR LATCH	
37	LC31162-001B-H	CENTER PLATE	
38	LC20585-001B-H	RIGHT PLATE	
39	LC31067-001A-H	POWER KNOB	
40	CM35235-003-H	SPRING	
41	LC31165-001B-H	LEFT PLATE	

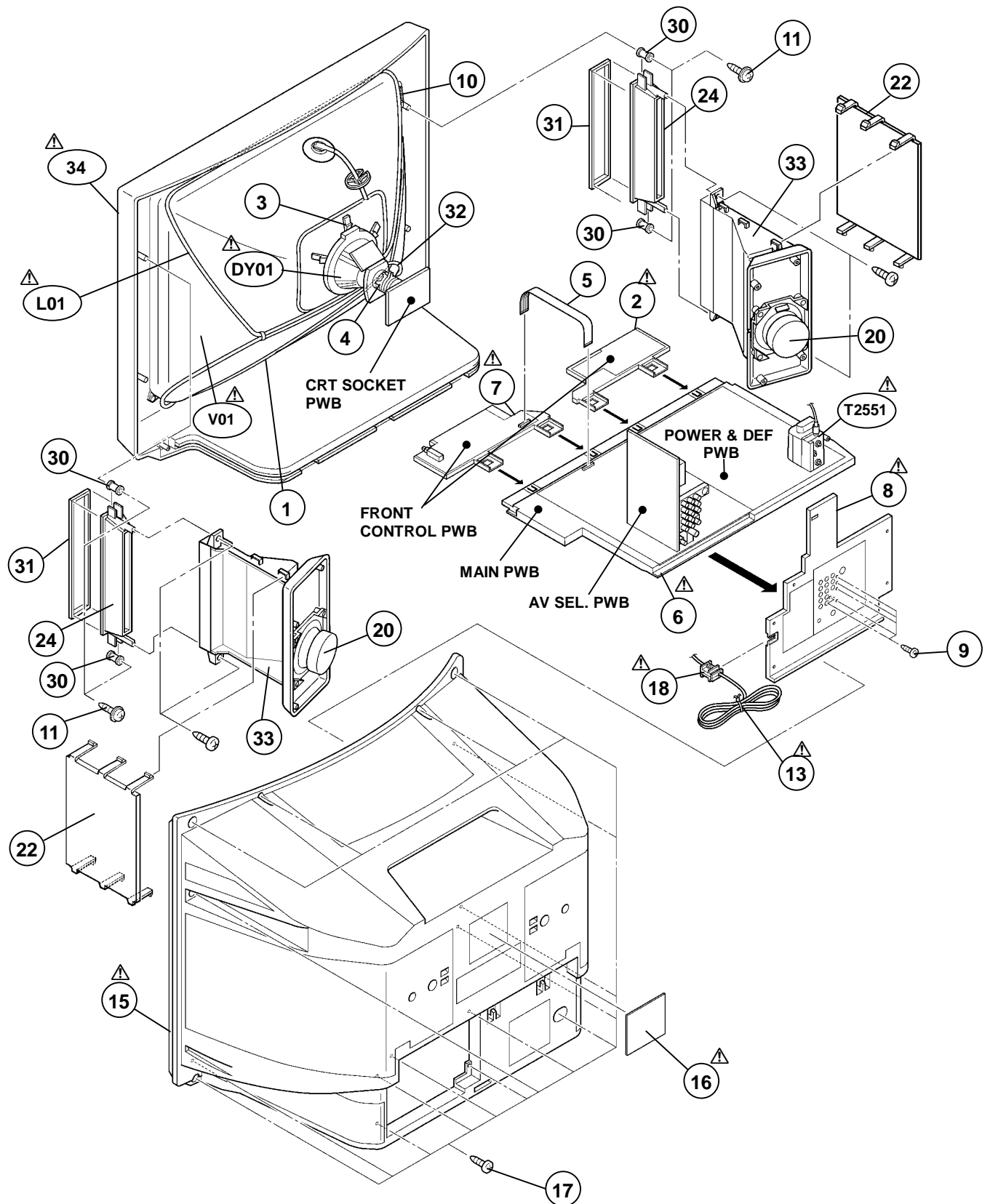
EXPLODED VIEW (I)



EXPLODED VIEW PARTS LIST(II)

△ Ref. No.	Part No.	Part Name	Description
△ V01	A68QCU259X	PICTURE TUBE (C)	
△ DY01	QQD0047-001	DEFLECTION YOKE	
△ L01	QQW0073-001	DEG COIL	
△ T2551	QQH0082-001	HVT	Within POWER & DEF PWB
1	CHGB0020-0B-FH	BRAIDED WIRE	
△ 2	LC10765-002B-H	CONTROL BASE R	
3	CE41488-00A	WEDGE ASSY	(× 4)
4	CE42388-00A	P. C. MAGNET	
5	CHFD125-08BD-N	FFC WIRE	
△ 6	LC10764-001A-H	CHASSIS BASE	
△ 7	LC10765-001B-H	CONTROL BASE L	
△ 8	LC10766-001B-H	TERMINAL BOARD	(× 4)
9	QYSBSF3012M	TAPPING SCREW	(× 5) For TERMINAL BOARD
10	A48457-3-H	SPRING	
11	LC40317-002A-H	TAPPING SCREW	(× 4)
△ 13	QMP40D0-200J5	POWER CORD	
△ 15	LC10763-002B-H	REAR COVER	
△ 16	LC20377-010B-H	RATING LABEL	
17	QYSBSFG4016Z	TAPPING SCREW	(× 16)
△ 18	CM23167-A01-H	CORD CLAMP	
20	CEBSF10P-03KJ6	SPEAKER	(× 2) SP01, SP02
22	LC10051-001A-H	DOME COVER	(× 2)
24	LC10767-001A-H	DOME ADAPTOR	(× 2)
30	LC40226-001A	SPACER	(× 4)
31	CM34837-056-H	STICK SHEET	(× 2)
32	CHGB0017-0C	BRAIDED SUB ASSY	
33	LC10050-001A-H	HORN	(× 2)
△ 34	LC10762-003B-H	FRONT CABINET	

EXPLODED VIEW (II)



PRINTED WIRING BOARD PARTS LIST

MAIN PW BOARD ASS'Y (SJK-1023A-H2)

△ Symbol No.	Part No.	Part Name	Description
RESISTOR			
R1002-03	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
R1005-06	NRSA02J-102X	MG R	1kΩ 1/10W J
R1007	NRSA02J-104X	MG R	100kΩ 1/10W J
R1201	NRSA02J-104X	MG R	100kΩ 1/10W J
R1202	NRSA02J-473X	MG R	47kΩ 1/10W J
R1203	NRSA02J-184X	MG R	180kΩ 1/10W J
R1204	NRSA02J-224X	MG R	220kΩ 1/10W J
R1205	NRSA02J-563X	MG R	56kΩ 1/10W J
R1206	NRSA02J-682X	MG R	6.8kΩ 1/10W J
R1207	NRSA02J-333X	MG R	33kΩ 1/10W J
R1209-10	NRSA02J-221X	MG R	220Ω 1/10W J
R1251	NRSA02J-473X	MG R	47kΩ 1/10W J
R1252	NRSA02J-392X	MG R	3.9kΩ 1/10W J
R1253	NRSA02J-473X	MG R	47kΩ 1/10W J
R1254	NRSA02J-103X	MG R	10kΩ 1/10W J
R1255	NRSA02J-823X	MG R	82kΩ 1/10W J
R1256	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R1257	NRSA02J-333X	MG R	33kΩ 1/10W J
R1258	NRSA02J-272X	MG R	2.7kΩ 1/10W J
R1259	NRSA02J-102X	MG R	1kΩ 1/10W J
R1260	NRSA02J-823X	MG R	82kΩ 1/10W J
R1261	NRSA02J-102X	MG R	1kΩ 1/10W J
R1262	NRSA02J-153X	MG R	15kΩ 1/10W J
R1263	NRSA02J-273X	MG R	27kΩ 1/10W J
R1264	NRSA02J-102X	MG R	1kΩ 1/10W J
R1265	NRSA02J-821X	MG R	820Ω 1/10W J
R1266	NRSA02J-223X	MG R	22kΩ 1/10W J
R1267-68	NRSA02J-101X	MG R	100Ω 1/10W J
R1269	NRSA02J-103X	MG R	10kΩ 1/10W J
R1270	NRSA02J-682X	MG R	6.8kΩ 1/10W J
R1271	NRSA02J-103X	MG R	10kΩ 1/10W J
R1301	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
R1302	NRSA02J-123X	MG R	12kΩ 1/10W J
R1304	QRG01GJ-121	OM R	120Ω 1W J
R1305	NRSA02J-562X	MG R	5.6kΩ 1/10W J
R1306	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R1307	NRSA02J-102X	MG R	1kΩ 1/10W J
R1308	NRSA02J-471X	MG R	470Ω 1/10W J
R1309	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R1310-11	NRSA02J-391X	MG R	390Ω 1/10W J
R1314-15	NRSA02J-562X	MG R	5.6kΩ 1/10W J
R1316	NRSA02J-224X	MG R	220kΩ 1/10W J
R1318-20	NRSA02J-102X	MG R	1kΩ 1/10W J
R1321	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R1326	NRSA02J-562X	MG R	5.6kΩ 1/10W J
R1327	NRSA02J-101X	MG R	100Ω 1/10W J
R1328	NRSA02J-102X	MG R	1kΩ 1/10W J
R1329-30	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
R1331	NRSA02J-101X	MG R	100Ω 1/10W J
R1334	NRSA02J-562X	MG R	5.6kΩ 1/10W J
R1335	NRSA02J-273X	MG R	27kΩ 1/10W J
R1336	NRSA02J-103X	MG R	10kΩ 1/10W J
R1337	NRSA02J-102X	MG R	1kΩ 1/10W J
R1338	NRSA02J-562X	MG R	5.6kΩ 1/10W J
R1339	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
R1340-41	NRSA02J-681X	MG R	680Ω 1/10W J
R1342	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R1346	QRE141J-102Y	C R	1kΩ 1/4W J
R1351-53	NRSA02J-272X	MG R	2.7kΩ 1/10W J
R1354	NRSA02J-102X	MG R	1kΩ 1/10W J
R1355	NRSA02J-153X	MG R	15kΩ 1/10W J
R1356	NRSA02J-102X	MG R	1kΩ 1/10W J
R1357	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R1358	NRSA02J-102X	MG R	1kΩ 1/10W J
R1359	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R1360	NRSA02J-392X	MG R	3.9kΩ 1/10W J
R1361	NRSA02J-102X	MG R	1kΩ 1/10W J
R1362	NRSA02J-122X	MG R	1.2kΩ 1/10W J

△ Symbol No.	Part No.	Part Name	Description
RESISTOR			
R1363-65	NRSA02J-123X	MG R	12kΩ 1/10W J
R1366	NRSA02J-392X	MG R	3.9kΩ 1/10W J
R1367-68	NRSA02J-102X	MG R	1kΩ 1/10W J
R1369-71	NRSA02J-101X	MG R	100Ω 1/10W J
R1401-02	NRSA02J-103X	MG R	10kΩ 1/10W J
R1403	NRSA02J-102X	MG R	1kΩ 1/10W J
R1404	NRSA02J-183X	MG R	18kΩ 1/10W J
R1405	NRSA02J-223X	MG R	22kΩ 1/10W J
R1411	NRVA02D-473X	MF R	47kΩ 1/10W D
R1413	NRVA02D-223X	MF R	22kΩ 1/10W D
R1414	NRVA02D-101X	MF R	100Ω 1/10W D
R1416	NRSA02J-101X	MG R	100Ω 1/10W J
R1417	NRSA02J-103X	MG R	10kΩ 1/10W J
R1418	NRSA02J-682X	MG R	6.8kΩ 1/10W J
R1420	NRSA02J-752X	MG R	7.5kΩ 1/10W J
R1421	NRSA02J-103X	MG R	10kΩ 1/10W J
R1501	NRSA02J-621X	MG R	620Ω 1/10W J
R1502	NRSA02J-103X	MG R	10kΩ 1/10W J
R1503	NRSA02J-104X	MG R	100kΩ 1/10W J
R1504	NRSA02J-822X	MG R	8.2kΩ 1/10W J
R1505-06	NRSA02J-221X	MG R	220Ω 1/10W J
R1507	NRSA02J-102X	MG R	1kΩ 1/10W J
R1516	NRSA02J-332X	MG R	3.3kΩ 1/10W J
R1517	NRSA02J-752X	MG R	7.5kΩ 1/10W J
R1518	NRSA02J-473X	MG R	47kΩ 1/10W J
R1519	NRSA02J-562X	MG R	5.6kΩ 1/10W J
R1520	NRSA02J-152X	MG R	1.5kΩ 1/10W J
R1522	NRSA02J-153X	MG R	15kΩ 1/10W J
R1523	NRSA02J-103X	MG R	10kΩ 1/10W J
R1524	NRSA02J-152X	MG R	1.5kΩ 1/10W J
R1551	QRK126J-100X	C R	10Ω 1/2W J
R1552	NRSA02J-124X	MG R	120kΩ 1/10W J
R1553	NRSA02J-683X	MG R	68kΩ 1/10W J
R1554	NRSA02J-333X	MG R	33kΩ 1/10W J
R1555	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R1556	NRSA02J-154X	MG R	150kΩ 1/10W J
R1557-58	NRSA02J-562X	MG R	5.6kΩ 1/10W J
R1559	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
R1560	NRSA02J-104X	MG R	100kΩ 1/10W J
R1561	QRK126J-100X	C R	10Ω 1/2W J
R1571	NRSA02J-101X	MG R	100Ω 1/10W J
R1572	NRSA02J-133X	MG R	13kΩ 1/10W J
R1573	NRSA02J-821X	MG R	820Ω 1/10W J
R1608-09	NRSA02J-392X	MG R	3.9kΩ 1/10W J
R1610-11	NRSA02J-104X	MG R	100kΩ 1/10W J
R1612	NRSA02J-101X	MG R	100Ω 1/10W J
R1614	NRSA02J-101X	MG R	100Ω 1/10W J
R1616	NRSA02J-563X	MG R	56kΩ 1/10W J
R1617	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R1618	NRSA02J-103X	MG R	10kΩ 1/10W J
R1619	NRSA02J-393X	MG R	39kΩ 1/10W J
R1620	NRSA02J-103X	MG R	10kΩ 1/10W J
R1621	NRSA02J-393X	MG R	39kΩ 1/10W J
R1622	NRSA02J-122X	MG R	1.2kΩ 1/10W J
R1623	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R1624	NRSA02J-563X	MG R	56kΩ 1/10W J
R1646	NRSA02J-473X	MG R	47kΩ 1/10W J
R1647	NRSA02J-273X	MG R	27kΩ 1/10W J
R1648	NRSA02J-104X	MG R	100kΩ 1/10W J
R1649	NRSA02J-682X	MG R	6.8kΩ 1/10W J
R1650	NRSA02J-104X	MG R	100kΩ 1/10W J
R1657	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
R1660	QRK126J-2R2X	C R	2.2Ω 1/2W J
R1661	NRSA02J-103X	MG R	10kΩ 1/10W J
R1663	NRSA02J-822X	MG R	8.2kΩ 1/10W J
R1664	NRSA02J-562X	MG R	5.6kΩ 1/10W J
R1683	QRK126J-2R2X	C R	2.2Ω 1/2W J
R1684-85	NRSA02J-101X	MG R	100Ω 1/10W J

△ Symbol No.	Part No.	Part Name	Description
RESISTOR			
R1689	NRSA02J-473X	MG R	47kΩ 1/10W J
R1690	NRSA02J-105X	MG R	1MΩ 1/10W J
R1691	NRSA02J-154X	MG R	150kΩ 1/10W J
R1692	NRSA02J-822X	MG R	8.2kΩ 1/10W J
R1693	NRSA02J-182X	MG R	1.8kΩ 1/10W J
R1694	NRSA02J-562X	MG R	5.6kΩ 1/10W J
R1695	NRSA02J-102X	MG R	1kΩ 1/10W J
R1696	NRSA02J-562X	MG R	5.6kΩ 1/10W J
R1697	NRSA02J-102X	MG R	1kΩ 1/10W J
R1698-99	NRSA02J-562X	MG R	5.6kΩ 1/10W J
R1716	NRSA02J-102X	MG R	1kΩ 1/10W J
R1718-19	NRSA02J-682X	MG R	6.8kΩ 1/10W J
R1722	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R1724-25	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R1727	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R1729-31	NRSA02J-221X	MG R	220Ω 1/10W J
R1732	NRSA02J-562X	MG R	5.6kΩ 1/10W J
R1733	NRSA02J-103X	MG R	10kΩ 1/10W J
R1734	NRSA02J-223X	MG R	22kΩ 1/10W J
R1735	NRSA02J-102X	MG R	1kΩ 1/10W J
R1736-37	NRSA02J-103X	MG R	10kΩ 1/10W J
R1739	NRSA02J-103X	MG R	10kΩ 1/10W J
R1740	NRSA02J-331X	MG R	330Ω 1/10W J
R1741-42	NRSA02J-102X	MG R	1kΩ 1/10W J
R1743-44	NRSA02J-101X	MG R	100Ω 1/10W J
R1745	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R1747	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R1748-52	NRSA02J-221X	MG R	220Ω 1/10W J
R1754	NRSA02J-683X	MG R	68kΩ 1/10W J
R1756	NRSA02J-103X	MG R	10kΩ 1/10W J
R1757	NRSA02J-393X	MG R	39kΩ 1/10W J
R1759	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R1761	NRSA02J-103X	MG R	10kΩ 1/10W J
R1763	NRSA02J-103X	MG R	10kΩ 1/10W J
R1764-66	NRSA02J-221X	MG R	220Ω 1/10W J
R1767	NRSA02J-103X	MG R	10kΩ 1/10W J
R1768	NRSA02J-473X	MG R	47kΩ 1/10W J
R1769	NRSA02J-823X	MG R	82kΩ 1/10W J
R1770-73	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R1774	NRSA02J-103X	MG R	10kΩ 1/10W J
R1775	NRSA02J-223X	MG R	22kΩ 1/10W J
R1776	NRSA02J-272X	MG R	2.7kΩ 1/10W J
R1777-79	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R1780	NRSA02J-102X	MG R	1kΩ 1/10W J
R1784	NRSA02J-473X	MG R	47kΩ 1/10W J
R1785	NRSA02J-223X	MG R	22kΩ 1/10W J
R1786	NRSA02J-473X	MG R	47kΩ 1/10W J
R1787	NRSA02J-332X	MG R	3.3kΩ 1/10W J
R1788	NRSA02J-272X	MG R	2.7kΩ 1/10W J
R1789	NRSA02J-473X	MG R	47kΩ 1/10W J
R1790	NRSA02J-682X	MG R	6.8kΩ 1/10W J
R1791	NRSA02J-183X	MG R	18kΩ 1/10W J
R1792	NRSA02J-103X	MG R	10kΩ 1/10W J
R1793	NRSA02J-821X	MG R	820Ω 1/10W J
R1794	NRSA02J-103X	MG R	10kΩ 1/10W J
R1795	NRSA02J-184X	MG R	180kΩ 1/10W J
R1796	NRSA02J-104X	MG R	100kΩ 1/10W J
R1797-98	NRSA02J-102X	MG R	1kΩ 1/10W J
R1802	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R1803-04	NRSA02J-473X	MG R	47kΩ 1/10W J
R1806	NRSA02J-103X	MG R	10kΩ 1/10W J
R1807	NRSA02J-102X	MG R	1kΩ 1/10W J
R1906	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R1910	NRSA02J-333X	MG R	33kΩ 1/10W J
R1911	NRSA02J-103X	MG R	10kΩ 1/10W J
R1912	NRSA02J-683X	MG R	68kΩ 1/10W J
R1913	NRSA02J-103X	MG R	10kΩ 1/10W J

△ Symbol No.	Part No.	Part Name	Description
CAPACITOR			
C1001	NCB21HK-222X	C CAP.	2200pF 50V K
C1002	QETN1CM-107Z	E CAP.	100μF 16V M
C1003	NCB21EK-104X	C CAP.	0.1μF 25V K
C1004	QETN1CM-108Z	E CAP.	1000μF 16V M
C1005	QETN1CM-107Z	E CAP.	100μF 16V M
C1006	QETN1HM-106Z	E CAP.	10μF 50V M
C1007	NCB21EK-104X	C CAP.	0.1μF 25V K
C1008	QETN1HM-106Z	E CAP.	10μF 50V M
C1009	NCB21EK-104X	C CAP.	0.1μF 25V K
C1201	NCB21EK-104X	C CAP.	0.1μF 25V K
C1202	QETN1HM-105Z	E CAP.	1μF 50V M
C1203	QETN1HM-106Z	E CAP.	10μF 50V M
C1204	NDC21HJ-101X	C CAP.	100pF 50V J
C1205	QETN1HM-106Z	E CAP.	10μF 50V M
C1206	NCB21EK-104X	C CAP.	0.1μF 25V K
C1207	NCB21HK-103X	C CAP.	0.01μF 50V K
C1208	QETN1CM-107Z	E CAP.	100μF 16V M
C1209	NCB21HK-103X	C CAP.	0.01μF 50V K
C1210	NDC21HJ-390X	C CAP.	39pF 50V J
C1251	NCB21HK-103X	C CAP.	0.01μF 50V K
C1252-53	NCB21EK-104X	C CAP.	0.1μF 25V K
C1254-55	NCB21HK-103X	C CAP.	0.01μF 50V K
C1256	QETN1HM-476Z	E CAP.	47μF 50V M
C1257	NCB21HK-103X	C CAP.	0.01μF 50V K
C1258-60	NCB21EK-104X	C CAP.	0.1μF 25V K
C1261-62	QETN1HM-106Z	E CAP.	10μF 50V M
C1301	NCB21EK-104X	C CAP.	0.1μF 25V K
C1302	NCB21HK-823X	CHIP CAP.	0.082μF 50V K
C1303	QETN1EM-476Z	E CAP.	47μF 25V M
C1304	NCB21HK-103X	C CAP.	0.01μF 50V K
C1305	QETN1CM-107Z	E CAP.	100μF 16V M
C1306	NCB21HK-103X	C CAP.	0.01μF 50V K
C1307	QETN1CM-477Z	E CAP.	470μF 16V M
C1308	NDC21HJ-120X	C CAP.	12pF 50V J
C1309	QETN1HM-475Z	E CAP.	4.7μF 50V M
C1310	NCB21HK-103X	C CAP.	0.01μF 50V K
C1311	QETN1HM-106Z	E CAP.	10μF 50V M
C1313	QETN1CM-107Z	E CAP.	100μF 16V M
C1314	NCB21HK-103X	C CAP.	0.01μF 50V K
C1315	QETN1HM-226Z	E CAP.	22μF 50V M
C1317-18	NDC21HJ-101X	C CAP.	100pF 50V J
C1319	QETN1CM-107Z	E CAP.	100μF 16V M
C1320	NCB21HK-103X	C CAP.	0.01μF 50V K
C1321-23	NCB21EK-104X	C CAP.	0.1μF 25V K
C1327	QETN1HM-475Z	E CAP.	4.7μF 50V M
C1331	QETN1HM-105Z	E CAP.	1μF 50V M
C1332	NCB21HK-103X	C CAP.	0.01μF 50V K
C1333	NCB21EK-104X	C CAP.	0.1μF 25V K
C1334-36	NCB21HK-103X	C CAP.	0.01μF 50V K
C1351	NDC21HJ-390X	C CAP.	39pF 50V J
C1401	QETN1HM-105Z	E CAP.	1μF 50V M
C1403	NCB21HK-103X	C CAP.	0.01μF 50V K
C1405	NCB21HK-103X	C CAP.	0.01μF 50V K
C1406	QFV71HJ-184Z	MF CAP.	0.18μF 50V J
C1407	QFV71HJ-824Z	MF CAP.	0.82μF 50V J
C1409	NCB21HK-183X	C CAP.	0.018μF 50V K
C1501	QETN1CM-477Z	E CAP.	470μF 16V M
C1502-04	NCB21HK-103X	C CAP.	0.01μF 50V K
C1505	NCB21HK-822X	C CAP.	8200pF 50V K
C1506	QETN1HM-105Z	E CAP.	1μF 50V M
C1507	NCB21HK-103X	C CAP.	0.01μF 50V K
C1508	QETN1CM-108Z	E CAP.	1000μF 16V M
C1509	NCB21HK-823X	CHIP CAP.	0.082μF 50V K
C1510	NCB21HK-103X	C CAP.	0.01μF 50V K
C1512	QTMN1HM-105Z	E CAP.	0.1μF 50V M
C1513	QETM1CM-228	E CAP.	2200μF 16V M
C1514	NCB21HK-103X	C CAP.	0.01μF 50V K
C1515	QFV71HJ-394Z	MF CAP.	0.39μF 50V J
C1516	NCB21HK-103X	C CAP.	0.01μF 50V K
C1517	QETN1CM-107Z	E CAP.	100μF 16V M
C1518	NCB21EK-104X	C CAP.	0.1μF 25V K
C1551-52	NCB21EK-224X	CHIP CAP.	0.22μF 25V K

△ Symbol No.	Part No.	Part Name	Description
CAPACITOR			
C1553	QETN1EM-476Z	E CAP.	47μF 25V M
C1554-55	NCB21EK-224X	CHIP CAP.	0.22μF 25V K
C1571	NCB21HK-103X	C CAP.	0.01μF 50V K
C1602	QETN1HM-107Z	E CAP.	100μF 50V M
C1608	NCF21CZ-105X	C CAP.	1μF 16V Z
C1610	NCF21CZ-105X	C CAP.	1μF 16V Z
C1612	NDC21HJ-470X	C CAP.	47pF 50V J
C1614	NCF21CZ-105X	C CAP.	1μF 16V Z
C1615	NDC21HJ-470X	C CAP.	47pF 50V J
C1617	NCF21CZ-105X	C CAP.	1μF 16V Z
C1618	QETN1HM-106Z	E CAP.	10μF 50V M
C1623-24	QETN1CM-227Z	E CAP.	220μF 16V M
C1625	QETN1HM-474Z	E CAP.	0.47μF 50V M
C1635	QETN1HM-474Z	E CAP.	0.47μF 50V M
C1638-39	NCF21HZ-224X	C CAP.	0.22μF 50V Z
C1640	QETN1HM-106Z	E CAP.	10μF 50V M
C1653	NCF21HZ-224X	C CAP.	0.22μF 50V Z
C1655	NCF21HZ-224X	C CAP.	0.22μF 50V Z
C1656	QETN1HM-228	E CAP.	2200μF 50V M
C1661-62	QETN1VM-228	E CAP.	2200μF 35V M
C1668	NCB21EK-104X	C CAP.	0.1μF 25V K
C1671	QENC1CM-226Z	BP E CAP.	22μF 16V M
C1672	QETN1AM-107Z	E CAP.	100μF 10V M
C1673	NCB21HK-563X	CHIP CAP.	0.056μF 50V K
C1674	NCB21HK-393X	C CAP.	0.039μF 50V K
C1675-76	QETN1HM-106Z	E CAP.	10μF 50V M
C1677	QETN1CM-107Z	E CAP.	100μF 16V M
C1678	QENC1CM-226Z	BP E CAP.	22μF 16V M
C1679	QETN1HM-105Z	E CAP.	1μF 50V M
C1680	NCB21HK-273X	C CAP.	0.027μF 50V K
C1681	NCB21HK-103X	C CAP.	0.01μF 50V K
C1682	QENC1CM-226Z	BP E CAP.	22μF 16V M
C1683	QETN1HM-226Z	E CAP.	22μF 50V M
C1684	QETN1CM-227Z	E CAP.	220μF 16V M
C1685-86	NCB21HK-272X	C CAP.	2700pF 50V K
C1687	NCF21CZ-105X	C CAP.	1μF 16V Z
C1688-89	NCB21EK-104X	C CAP.	0.1μF 25V K
C1690	NCF21CZ-105X	C CAP.	1μF 16V Z
C1691-94	NCB21EK-104X	C CAP.	0.1μF 25V K
C1696	QETN1HM-106Z	E CAP.	10μF 50V M
C1697	QETN1HM-106Z	E CAP.	10μF 50V M
C1703	QETN1EM-476Z	E CAP.	47μF 25V M
C1704	NCB21EK-104X	C CAP.	0.1μF 25V K
C1705	QETN1AM-107Z	E CAP.	100μF 10V M
C1706	NCB21EK-104X	C CAP.	0.1μF 25V K
C1707	QETN1HM-474Z	E CAP.	0.47μF 50V M
C1708	QETN1EM-476Z	E CAP.	47μF 25V M
C1709-10	NDC21HJ-9R0X	C CAP.	9.0pF 50V J
C1711	NCB21EK-104X	C CAP.	0.1μF 25V K
C1712	NDC21HJ-151X	C CAP.	150pF 50V J
C1713	QETN1HM-105Z	E CAP.	1μF 50V M
C1714	NDC21HJ-561X	C CAP.	560pF 50V J
C1715	QETN1HM-105Z	E CAP.	1μF 50V M
C1717	QETN1HM-105Z	E CAP.	1μF 50V M
C1718	NCB21HK-333X	C CAP.	0.033μF 50V K
C1719	NCB21EK-104X	C CAP.	0.1μF 25V K
C1724	QETN1HM-106Z	E CAP.	10μF 50V M
C1725	NCB21HK-102X	C CAP.	1000pF 50V K
COIL			
L1001	QQL244K-5R6Z	PEAKING COIL	5.6μH
L1002	QQL244K-270Z	PEAKING COIL	27μH
L1201	QQL244K-330Z	PEAKING COIL	33μH
L1301-02	QQL244K-4R7Z	PEAKING COIL	4.7μH
L1303-04	QQL244K-470Z	PEAKING COIL	47μH
L1305	QQL244K-4R7Z	PEAKING COIL	4.7μH
L1307	CE41433-001Z	BEADS CORE	
L1501	QQL244J-151Z	PEAKING COIL	150μH
L1701	QQL244K-4R7Z	PEAKING COIL	4.7μH
L1702	QQL244K-3R9Z	PEAKING COIL	3.9μH

△ Symbol No.	Part No.	Part Name	Description
DIODE			
D1301	MA3051/M/-X	ZENER DIODE	
D1302	MA111-X	SI DIODE	
D1351-53	MA111-X	SI DIODE	
D1402	MA111-X	SI DIODE	
D1503	RB100A-T2	SI DIODE	
D1601	MA3062-X	ZENER DIODE	
D1602	MA111-X	SI DIODE	
D1608-10	MA111-X	SI DIODE	
D1612	MA111-X	SI DIODE	
D1617-18	MA3330/L/-X	ZENER DIODE	
D1624-25	MA111-X	SI DIODE	
D1704	MA111-X	SI DIODE	
D1706	MA111-X	SI DIODE	
TRANSISTOR			
Q1201	2SC2412K/QR/-X	SI TRANSISTOR	
Q1251-52	2SC2412K/QR/-X	SI TRANSISTOR	
Q1253-54	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1255-56	DTC124EKA-X	DIGI TRANSISTOR	
Q1301-03	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1306-07	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1309	2SC2412K/QR/-X	SI TRANSISTOR	
Q1310	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1341	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1351-54	2SC2412K/QR/-X	SI TRANSISTOR	
Q1355	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1501-03	2SC2412K/QR/-X	SI TRANSISTOR	
Q1604	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1609	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1610	DTC323TK-X	DIGI TRANSISTOR	
Q1612	DTC323TK-X	DIGI TRANSISTOR	
Q1613	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1614	2SC2412K/QR/-X	SI TRANSISTOR	
Q1706	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1707	2SC2412K/QR/-X	SI TRANSISTOR	
Q1708	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1709-10	2SC2412K/QR/-X	SI TRANSISTOR	
Q1711	2SA1037AK/QR/-X	SI TRANSISTOR	
Q1712	2SC2412K/QR/-X	SI TRANSISTOR	
Q1903-04	2SC2412K/QR/-X	SI TRANSISTOR	
IC			
IC1201	TA1226N	I C	
IC1251	CXA2039M-X	I C	
IC1301	TB1227CN	I C. (DIGI-OTHER)	
IC1501	ANS441SA-W	I C. (MONO-ANA)	
IC1502	BA05T	I C. (MONO-ANA)	
IC1551	LA6515	I C. (MONO-ANA)	
IC1601	ANS277	I C. (MONO-ANA)	
IC1605	BA4558F-X	I C. (MONO-ANA)	
IC1606	AN7395S-W	I C	
IC1607	TDA7315D	I C. (DIGI-OTHER)	
IC1701	M37280MF-170SP	I C	
IC1702	AT24C16-29RS8	I C.	(SERVICE)
IC1703	L78L05E-MA	I C. (MONO-ANA)	
OTHERS			
△ CP1601	ICP-N50-Y	I C. PROTECT	
DL1341	CE40986-A01	DELAY LINE	
K1001-02	CE41433-001Z	BEADS CORE	
K1005	CE41433-001Z	BEADS CORE	
LC1301	CE41242-222Z	EMI FILTER	
TU1001	QAU0197-002	TUNER	
X1301	QAX0305-001Z	CRYSTAL	
X1701	CST8.00MTW	CER. RESONATOR	

POWER & DEF PW BOARD ASS'Y (SJK-2022A-H2)

△ Symbol No.	Part No.	Part Name	Description
RESISTOR			
R2401	QRA14CF-1202Y	MF R	12kΩ 1/4W F
R2402	QRA14CF-1002Y	MF R	10kΩ 1/4W F
R2403	QRE141J-332Y	C R	3.3kΩ 1/4W J
R2404	QRE141J-821Y	C R	820Ω 1/4W J
R2405	QRA14CF-8200Y	MF R	820Ω 1/4W F
R2406	QRE141J-472Y	C R	4.7kΩ 1/4W J
R2408	QRE141J-222Y	C R	2.2kΩ 1/4W J
R2409	QRE141J-103Y	C R	10kΩ 1/4W J
R2410	QRE141J-102Y	C R	1kΩ 1/4W J
R2414	QRE121J-1R2Y	C R	1.2Ω 1/2W J
R2415	QRT01EJ-1R0X	MF R	1.0Ω 1W J
R2416	QRL01EJ-221X	OM R	220Ω 1W J
R2417	QRE121J-1R0Y	C R	1.0Ω 1/2W J
R2418	QRE141J-154Y	C R	150kΩ 1/4W J
R2451	QRE121J-104Y	C R	100kΩ 1/2W J
R2452	QRE121J-124Y	C R	120kΩ 1/2W J
R2453	QRE121J-473Y	C R	47kΩ 1/2W J
R2454	QRE121J-153Y	C R	15kΩ 1/2W J
R2461	QRE141J-331Y	C R	330Ω 1/4W J
R2463-64	QRE121J-392Y	C R	3.9kΩ 1/2W J
R2465	QRE121J-472Y	C R	4.7kΩ 1/2W J
R2466	QRE121J-821Y	C R	820Ω 1/2W J
R2467	QRL03EJ-270X	OM R	27Ω 3W J
R2468	QRE141J-104Y	C R	100kΩ 1/4W J
R2469	QRE141J-682Y	C R	6.8kΩ 1/4W J
R2470	QRE141J-0R0Y	C R	0.0Ω 1/4W J
R2492	QRE141J-683Y	C R	68kΩ 1/4W J
R2493	QRE141J-224Y	C R	220kΩ 1/4W J
△ R2494	QRZ9017-4R7	F R	4.7Ω 1/4W J
R2495	QRE141J-103Y	C R	10kΩ 1/4W J
R2496	QRE141J-183Y	C R	18kΩ 1/4W J
R2497	QRE141J-153Y	C R	15kΩ 1/4W J
R2502	QRE141J-222Y	C R	2.2kΩ 1/4W J
R2503	QRE121J-152Y	C R	1.5kΩ 1/2W J
R2504-05	QRL03EJ-182X	OM R	1.8kΩ 3W J
R2521	QRE121J-220Y	C R	22Ω 1/2W J
R2522	QRL03EJ-103X	OM R	10kΩ 3W J
R2523	QRE121J-471Y	C R	470Ω 1/2W J
△ R2524	QRZ9017-4R7	F R	4.7Ω 1/4W J
R2525	QRE141J-222Y	C R	2.2kΩ 1/4W J
R2542	QRE121J-222Y	C R	2.2kΩ 1/2W J
R2544	QRE121J-104Y	C R	100kΩ 1/2W J
R2545	QRE141J-123Y	C R	12kΩ 1/4W J
△ R2551	QRX029J-4R7	MF R	4.7 Ω 2W J
△ R2552	QRX029J-4R7	MF R	4.7 Ω 2W J
R2553	QRF104K-2R2	UNF R	2.2Ω 10W K
△ R2554	QRZ9022-R33	F R	0.33Ω 1W K
△ R2555	QRZ9011-4R7	F R	4.7Ω 1/2W J
R2561	QRL02EJ-220X	OM R	22Ω 2W J
R2562	QRE121J-123Y	C R	12kΩ 1/2W J
R2563	QRZ0056-103Z	COMP. R	10kΩ 1/2W K
R2564-68	QRE121J-184Y	C R	180kΩ 1/2W J
R2569	QRE141J-823Y	C R	82kΩ 1/4W J
R2570	QRE141J-183Y	C R	18kΩ 1/4W J
R2572-73	QRE141J-183Y	C R	18kΩ 1/4W J
R2574	QRE141J-392Y	C R	3.9kΩ 1/4W J
R2575	QRE141J-152Y	C R	1.5kΩ 1/4W J
R2585	QRE141J-103Y	C R	10kΩ 1/4W J
R2586	QRE141J-682Y	C R	6.8kΩ 1/4W J
R2587-89	QRE141J-103Y	C R	10kΩ 1/4W J
R2590	QRE141J-152Y	C R	1.5kΩ 1/4W J
R2591	QRE121J-392Y	C R	3.9kΩ 1/2W J
R2592	QRA14CF-1201Y	MF R	1.2kΩ 1/4W F
R2593	QRE141J-183Y	C R	18kΩ 1/4W J
R2594	QRE141J-222Y	C R	2.2kΩ 1/4W J
R2597	QRE141J-273Y	C R	27kΩ 1/4W J
△ R2901	QRZ0123-121	UNF R	120 Ω 7W J
△ R2903	QRZ0186-1R8	UNF R	1.8Ω 15W J

△ Symbol No.	Part No.	Part Name	Description
RESISTOR			
R2904-05	QRE121J-274Y	C R	270kΩ 1/2W J
R2906	QRE141J-473Y	C R	47kΩ 1/4W J
R2908	QRE121J-684Y	C R	680kΩ 1/2W J
R2909	QRG039J-683	OM R	68kΩ 3W J
R2910	QRE121J-681Y	C R	680Ω 1/2W J
R2911	QRM059J-R10	MP R	0.1Ω 5W K
△ R2913	QRZ9017-4R7	F R	4.7Ω 1/4W J
R2914	QRE121J-152Y	C R	1.5kΩ 1/2W J
R2915	QRE141J-152Y	C R	1.5kΩ 1/4W J
R2916	QRE141J-103Y	C R	10kΩ 1/4W J
R2917	QRL02EJ-220X	OM R	22Ω 2W J
R2918	QRE121J-332Y	C R	3.3kΩ 1/2W J
R2919	QRE141J-224Y	C R	220kΩ 1/4W J
R2921	QRL039J-101	OM R	100Ω 3W J
R2935	QRE141J-473Y	C R	47kΩ 1/4W J
R2936	QRE141J-103Y	C R	10kΩ 1/4W J
R2952	QRE141J-182Y	C R	1.8kΩ 1/4W J
R2953	QRE141J-222Y	C R	2.2kΩ 1/4W J
R2954	QRE141J-562Y	C R	5.6kΩ 1/4W J
R2955	QRE141J-822Y	C R	8.2kΩ 1/4W J
R2956	QRE141J-562Y	C R	5.6kΩ 1/4W J
R2957	QRE141J-332Y	C R	3.3kΩ 1/4W J
R2958	QRE141J-103Y	C R	10kΩ 1/4W J
R2959	QRE141J-683Y	C R	68kΩ 1/4W J
R2960	QRE141J-562Y	C R	5.6kΩ 1/4W J
R2961	QRE141J-683Y	C R	68kΩ 1/4W J
R2962	QRE141J-394Y	C R	390kΩ 1/4W J
R2963	QRE141J-562Y	C R	5.6kΩ 1/4W J
R2964	QRE121J-102Y	C R	1kΩ 1/2W J
R2965	QRE141J-222Y	C R	2.2kΩ 1/4W J
R2966	QRE141J-683Y	C R	68kΩ 1/4W J
R2967	QRL03EJ-223X	OM R	22kΩ 3W J
R2968	QRE141J-391Y	C R	390Ω 1/4W J
R2969	QRE141J-182Y	C R	1.8kΩ 1/4W J
R2970	QRL01EJ-181X	OM R	180Ω 1W J
R2971	QRE141J-471Y	C R	470Ω 1/4W J
R2972	QRE141J-391Y	C R	390Ω 1/4W J
R2973	QRE141J-182Y	C R	1.8kΩ 1/4W J
R2974	QRE141J-683Y	C R	68kΩ 1/4W J
R2976	QRX029J-3R3	MF R	3.3Ω 2W J
R2978	QRE141J-822Y	C R	8.2kΩ 1/4W J
R2981	QRL03EJ-150X	OM R	15kΩ 3W J
R2982	QRE141J-682Y	C R	6.8kΩ 1/4W J
R2983	QRE141J-561Y	C R	560Ω 1/4W J
△ R2991	QRZ0057-825	C R	8.2MΩ 1W J

CAPACITOR

C2401	QEHR1VM-227Z	E CAP.	220μF 35V M
C2402	QETM1VM-108	E CAP.	1000μF 35V M
C2403	QFLC2AK-104Z	M CAP.	0.1μF 100V K
C2404	QETN1HM-105Z	E CAP.	1μF 50V M
C2405	QFV71HJ-184Z	MF CAP.	0.18μF 50V J
C2406	QCZ0337-180Z	C CAP.	180pF 2kV J
C2407	QFLC1HJ-102Z	M CAP.	1000pF 50V J
C2408	QETN1HM-106Z	E CAP.	10μF 50V M
C2410	QFV71HJ-334Z	MF CAP.	0.33μF 50V J
C2411	QFLC2AJ-563Z	M CAP.	0.056μF 100V J
C2412	QFV71HJ-334Z	MF CAP.	0.33μF 50V J
C2451	QFV71HJ-104Z	MF CAP.	0.1μF 50V J
C2461	QFZ0199-185	MPP CAP.	1.8μF 250V J
C2462	QETN1HM-106Z	E CAP.	10μF 50V M
C2463	QFLC1HJ-153Z	M CAP.	0.015μF 50V J
C2464	QFLC1HJ-333Z	M CAP.	0.033μF 50V J
C2465	QCZ0120-104Z	C CAP.	0.1μF 25V Z
C2466	QETN1HM-106Z	E CAP.	10μF 50V M
C2491	QETN1HM-105Z	E CAP.	1μF 50V M
C2492	QETN1HM-106Z	E CAP.	10μF 50V M
C2502	QCB32HK-681Z	C CAP.	680pF 500V K

△ Symbol No.	Part No.	Part Name	Description
CAPACITOR			
C2503	QEH2CM-105Z	E CAP.	1μF 160V M
△ C2521	QFZ0200-402	MPP CAP.	4000pF1.5KVH ±3%
△ C2522	QFZ0200-133	MPP CAP.	0.013μF1.5KVH ±3%
△ C2523	QFP32GJ-223	PP CAP.	0.022μF 400V J
△ C2524	QFZ0199-154	MPP CAP.	0.15μF 250V J
△ C2526	QFZ0199-184	MPP CAP.	0.18μF 250V J
C2527	QEH2EM-475Z	E CAP.	4.7μF 250V M
△ C2529	QFZ0128-473	MPP CAP.	0.047μF 400V ±3%
C2530	QCB32HK-561Z	C CAP.	560pF 500V K
C2531	QFLC1HJ-103Z	M CAP.	0.01μF 50V J
C2532	QCS32HJ-101Z	C CAP.	100pF 500V J
△ C2542	QFZ0199-184	MPP CAP.	0.18μF 250V J
C2551	QETN2EM-106Z	E CAP.	10μF 250V M
C2552	QCB32HK-561Z	C CAP.	560pF 500V K
C2553	QEH1EM-108Z	E CAP.	1000μF 25V M
C2554	QCB32HK-561Z	C CAP.	560pF 500V K
C2555	QEH1EM-108Z	E CAP.	1000μF 25V M
C2560	QETM2CM-227	E CAP.	220μF 160V M
C2561	QFV71HJ-124Z	MF CAP.	0.12μF 50V J
△ C2563-64	QCZ0122-471	C CAP.	470pF 2kV K
△ C2565	QFZ0122-682	MPP CAP.	6800pF1.8KVH ±3%
△ C2566	QFZ0200-113	MPP CAP.	0.011μF1.5KVH ±3%
C2567	QETN1EM-476Z	E CAP.	47μF 25V M
C2568	QFLC1HJ-563Z	M CAP.	0.056μF 50V J
C2569	QETN1EM-476Z	E CAP.	47μF 25V M
C2570	QETN1EM-476Z	E CAP.	47μF 25V M
C2591	QETN1AM-107Z	E CAP.	100μF 10V M
C2592	QETN1EM-476Z	E CAP.	47μF 25V M
C2594	QETN1AM-227Z	E CAP.	220μF 10V M
△ C2902	QCZ9015-102Z	C CAP.	1000pFAC250V Z
△ C2903	QCZ9015-102Z	C CAP.	1000pFAC250V Z
△ C2905	QCZ9015-102Z	C CAP.	1000pFAC250V Z
△ C2906	QCZ9015-102Z	C CAP.	1000pFAC250V Z
△ C2907	QE20371-337	E CAP.	330μF 400V M
C2908	QCB32HK-103	C CAP.	0.01μF 500V K
C2911	QCZ0325-821	C CAP.	820pF 2000V K
C2912	QCS31HJ-471Z	C CAP.	470pF 50V J
C2913	QETN1HM-476Z	E CAP.	47μF 50V M
C2916	QETN1HM-107Z	E CAP.	100μF 50V M
C2917	QFV71HJ-104Z	MF CAP.	0.1μF 50V J
C2918	QCB31HK-152Z	C CAP.	1500pF 50V K
C2919	QFLC1HJ-223Z	M CAP.	0.022μF 50V J
△ C2920	QFZ9040-104	MF CAP.	0.1μFAC275V M
△ C2921	QFZ9040-473	MF CAP.	0.047μFAC275V M
C2922	QCB32HK-103	C CAP.	0.01μF 500V K
C2951	QCZ0115-561Z	C CAP.	560pF 2kV K
C2952	QE20203-227	E CAP.	220μF 160V M
C2954	QETN1EM-108Z	E CAP.	1000μF 25V M
C2956	QETM1CM-228	E CAP.	2200μF 16V M
C2961	QETM1HM-228	E CAP.	2200μF 50V M
C2962	QFV71HJ-104Z	MF CAP.	0.1μF 50V J
C2964	QFV71HJ-684Z	MF CAP.	0.68μF 50V J
C2965	QFLC1HJ-103Z	M CAP.	0.01μF 50V J
C2966	QFLC1HJ-473Z	M CAP.	0.047μF 50V J
C2967	QFV71HJ-104Z	MF CAP.	0.1μF 50V J
C2968	QCZ0120-104Z	C CAP.	0.1μF 25V Z
C2969	QEH1CM-477Z	E CAP.	470μF 16V M
C2970	QEH1CM-107Z	E CAP.	100μF 16V M
C2971	QCZ0120-104Z	C CAP.	0.1μF 25V Z
C2972	QETN1CM-227Z	E CAP.	220μF 16V M
C2973	QETN1EM-476Z	E CAP.	47μF 25V M
C2974	QCZ0120-104Z	C CAP.	0.1μF 25V Z
C2975	QEH1AM-227Z	E CAP.	220μF 10V M
C2976	QETN1EM-476Z	E CAP.	47μF 25V M
△ C2982	QCZ0115-471Z	C CAP.	470pF 2kV K
△ C2991	QCZ9079-102	C CAP.	1000pFAC250V M

△ Symbol No.	Part No.	Part Name	Description
TRANSFORMER			
T2501	CE42034-002	H.DRIVE TRANSF.	
△ T2551	QQH0082-001	H.V. TRANSF.	
T2561	QQR0898-001	DEF. TRANSF.	
△ T2901	QQS0075-001	SWITCH. TRANSF.	
COIL			
L2461	QQR1138-001	CHOKE COIL	
L2521	QQL2028-501	CHOKE COIL	
L2522	CELL001-002	LINEARITY COIL	
L2561	QQL2028-272	CHOKE COIL	
L2901-02	QQL402K-100	COIL	10μH
L2951	QQL2026-460	HEATER CHOKE	
L2952-54	QQL26AM-5R6Z	CHOKE COIL	
DIODE			
D2401	MTZJ75-T2	ZENER DIODE	
D2402	1N4003-T2	SI. DIODE	
D2403	1SS133-T2	SI. DIODE	
D2451	RGP10J-5025-T3	SI. DIODE	
D2491	RGP10J-5025-T3	SI. DIODE	
D2492	MTZJ22B-T2	ZENER DIODE	
D2493-95	1SS133-T2	SI. DIODE	
D2521	RH3G-F1	SI. DIODE	
D2522	RU30-F1	SI. DIODE	
D2523	RGP10J-5025-T3	SI. DIODE	
D2525	MTZJ9.1B-T2	ZENER DIODE	
D2551	RH1S-LFA1	SI. DIODE	
D2553-54	RU3AM-LFC4	SI. DIODE	
D2561-62	ES1F-LFG2	SI. DIODE	
D2592	MTZJ7.5B-T2	ZENER DIODE	
D2594	MTZJ7.5S-T2	ZENER DIODE	
△ D2901	D3SB60	BRIDGE DIODE	
D2902	SARS01-T2	DIODE	
D2903	MTZJ6.8C-T2	ZENER DIODE	
D2904-05	RGP10J-5025-T3	SI. DIODE	
D2906	MTZJ8.2B-T2	ZENER DIODE	
D2907	MTZJ20B-T2	ZENER DIODE	
D2908-09	1SS133-T2	SI. DIODE	
D2911	MTZJ15B-T2	ZENER DIODE	
D2912	1SS133-T2	SI. DIODE	
D2913	MTZJ27B-T2	ZENER DIODE	
D2914	1SS133-T2	SI. DIODE	
D2951	RU4B-F1	SI. DIODE	
D2952	1SS133-T2	SI. DIODE	
D2953	RU30Y-F1	SI. DIODE	
D2954	RU30-F1	SI. DIODE	
D2956	FMX-G12S	SI. DIODE	
D2958	1SR35-400A-T2	SI. DIODE	
D2959	MTZJ9.1B-T2	ZENER DIODE	
D2960	MTZJ7.5S-T2	ZENER DIODE	
D2961-62	AG01Z-T2	SI. DIODE	
D2964	MTZJ33B-T2	ZENER DIODE	
D2965-68	1SS133-T2	SI. DIODE	
D2970	AG01-T2	SI. DIODE	
D2972	1SS133-T2	SI. DIODE	
D2981-83	1SS133-T2	SI. DIODE	
TRANSISTOR			
Q2401	DTC124ESA-T	DIGI. TRANSISTOR	
Q2402	2SC1740S/QR/-T	SI. TRANSISTOR	
Q2451	DTC124ESA-T	DIGI. TRANSISTOR	
Q2461	2SD140B/OY/-LB	SI. TRANSISTOR	
Q2462-63	2SA933AS/QR/-T	SI. TRANSISTOR	
Q2464	2SC1740S/QR/-T	SI. TRANSISTOR	
Q2501	BSN304-T	F. E. T.	
△ Q2521	2SD2559-LB	SI. TRANSISTOR	H. OUT
Q2542	DTC124ESA-T	DIGI. TRANSISTOR	
Q2544	2SK2459N-F54	F. E. T.	
Q2561-62	2SC1740S/QR/-T	SI. TRANSISTOR	
Q2563	2SC4686A	POW. TRANSISTOR	
Q2567-68	2SC1740S/QR/-T	SI. TRANSISTOR	

Symbol No.	Part No.	Part Name	Description
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TRANSISTOR

Q2591	2SA1208/ST/Z1-T	SI. TRANSISTOR	
Q2592	DTC124ESA-T	DIGI. TRANSISTOR	
Q2593	2SC1740S/QR/-T	SI. TRANSISTOR	
Q2901	2SC1740S/QR/-T	SI. TRANSISTOR	
Q2932	2SC1740S/QR/-T	SI. TRANSISTOR	
Q2951-58	2SC1740S/QR/-T	SI. TRANSISTOR	

IC

IC2401	LA7845N	I.C. (MONO-ANA)	
△ IC2901	STR-F6456S/F7	I C	
IC2951	SE135N	I.C. (HYBRID)	
IC2952	PQ12RD21	I C	
IC2953	BA09T	I.C. (MONO-ANA)	
IC2954	PQ05RD21	I C	

OTHERS

△ CP2952	ICP-N38-Y	I.C. PROTECT	
K2401	CE41433-001Z	BEADS CORE	
K2901	CH41005-H-10C	F.BUS WIRE	
K2902	QQR0679-001	FERRITE BEADS	
K2951	QQR0872-001Y	FERRITE BEADS	
K2953	CE41433-001Z	BEADS CORE	
△ LF2901	QQR1035-002	LINE FILTER	
△ PC2541	PC123F2	I.C. (PH.COUPLER)	
△ PC2901	PC123F2	I.C. (PH.COUPLER)	
△ RY2951	QSK0099-001	RELAY	
△ TH2901	QAD0119-9R0	P.THERMISTOR	

CRT SOCKET PW BOARD ASS'Y (SJK-3011A-H2)

Symbol No.	Part No.	Part Name	Description
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RESISTOR

R3101-03	NRSA02J-101X	MG R	100Ω 1/10W J
R3107-09	NRSA02J-182X	MG R	1.8kΩ 1/10W J
R3110-12	NRSA02J-151X	MG R	150Ω 1/10W J
R3113-15	NRSA02J-470X	MG R	47Ω 1/10W J
R3116-21	QRL02EJ-153X	OM R	15kΩ 2W J
R3125-27	QRZ0107-102Z	C R	1kΩ 1/2W K
R3128	NRSA02J-122X	MG R	1.2kΩ 1/10W J
R3130	QRL01EJ-121X	OM R	120Ω 1W J
R3135	QRZ0107-474Z	C R	470kΩ 1/2W K
R3136	QRE121J-474Y	C R	470kΩ 1/2W J
R3137	QRZ0107-102Z	C R	1kΩ 1/2W K
R3138	QRE121J-105Y	C R	1MΩ 1/2W J
R3151	NRSA02J-122X	MG R	1.2kΩ 1/10W J
R3152	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R3154	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
R3303	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
R3312	NRSA02J-153X	MG R	15kΩ 1/10W J
R3313	NRSA02J-152X	MG R	1.5kΩ 1/10W J
R3314	NRSA02J-680X	MG R	68Ω 1/10W J
R3315	NRSA02J-221X	MG R	220Ω 1/10W J
R3316	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R3317	NRSA02J-470X	MG R	47Ω 1/10W J
△ R3318	QRJ146J-100X	C R	10Ω 1/4W J
R3319	NRSA02J-470X	MG R	47Ω 1/10W J
R3320	NRSA02J-122X	MG R	1.2kΩ 1/10W J
R3321	NRSA02J-390X	MG R	39Ω 1/10W J
R3322	QRE121J-2R7Y	C R	2.7Ω 1/2W J
R3323-24	QRE121J-563Y	C R	56kΩ 1/2W J
R3325	NRSA02J-122X	MG R	1.2kΩ 1/10W J
R3326	QRE121J-2R7Y	C R	2.7Ω 1/2W J
R3327	NRSA02J-390X	MG R	39Ω 1/10W J
R3328	NRSA02J-121X	MG R	120Ω 1/10W J
R3329	QRL02EJ-391X	OM R	390Ω 2W J
R3332	NRSA02J-683X	MG R	68kΩ 1/10W J
R3333	NRSA02J-333X	MG R	33kΩ 1/10W J
R3334	NRSA02J-683X	MG R	68kΩ 1/10W J
R3335	NRSA02J-333X	MG R	33kΩ 1/10W J

CAPACITOR

C3101-03	NDC21HJ-471X	C CAP.	470pF 50V J
C3104	QETN1CM-107Z	E CAP.	100μF 16V M
C3105	QETN1EM-476Z	E CAP.	47μF 25V M
C3107	QETN1HM-335Z	E CAP.	3.3μF 50V M
C3113	QCZ9078-103	C CAP.	0.01μFAC250V M
C3114	QETM2EM-336	E CAP.	33μF 250V M
C3115	QETM2EM-106	E CAP.	10μF 250V M
C3116	NDC21HJ-471X	C CAP.	470pF 50V J
C3117	QETM2EM-336	E CAP.	33μF 250V M
C3304	NCB21HK-103X	C CAP.	0.01μF 50V K
C3305	QETN1HM-335Z	E CAP.	3.3μF 50V M
C3306	QETN1CM-107Z	E CAP.	100μF 16V M
C3307	NDC21HJ-5R0X	C CAP.	5.0pF 50V J
C3308	QETN2CM-106Z	E CAP.	10μF 160V M
C3309	QCB32HK-472Z	C CAP.	4700pF 500V K
C3310	QETN2CM-106Z	E CAP.	10μF 160V M
C3311	NDC21HJ-821X	C CAP.	820pF 50V J
C3312	QCB32HK-472Z	C CAP.	4700pF 500V K
C3313	NDC21HJ-561X	C CAP.	560pF 50V J
C3314	QETN1CM-107Z	E CAP.	100μF 16V M
C3315	QCS32HJ-680Z	C CAP.	68pF 500V J
C3316	QETN1CM-107Z	E CAP.	100μF 16V M
C3317	QETN1AM-337Z	E CAP.	330μF 10V M
C3318	NDC21HJ-561X	C CAP.	560pF 50V J

DIODE

D3151	MA111-X	SI. DIODE
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△ Symbol No.	Part No.	Part Name	Description
DIODE			
D3152	MA3047/H/-X	ZENER DIODE	
D3153-55	MA111-X	SI. DIODE	
D3156	MA3047/H/-X	ZENER DIODE	
D3163	MA3150/M/-X	ZENER DIODE	
D3164	1SR35-400A-T2	SI. DIODE	
D3302-03	RH15-T3	SI. DIODE	
D3304-05	MA111-X	SI. DIODE	
TRANSISTOR			
Q3101-03	2SC1740S/QR/-T	SI. TRANSISTOR	
Q3104-06	2SC4544-LB	SI. TRANSISTOR	
Q3151	2SA1037AK/QR/-X	SI. TRANSISTOR	
Q3152	2SC4682-T	SI. TRANSISTOR	
Q3304-05	2SC1740S/QR/-T	SI. TRANSISTOR	
Q3306	2SA933AS/QR/-T	SI. TRANSISTOR	
Q3307	2SA1837	SI. TRANSISTOR	
Q3308	2SC4793	SI. TRANSISTOR	
Q3311	2SA1037AK/QR/-X	SI. TRANSISTOR	
Q3312	2SC2412K/QR/-X	SI. TRANSISTOR	
OTHERS			
△ FR3330	QRZ9021-561	F. R.	560Ω 1W J
K3301-04	CE41492-001Z	CHOKE COIL	
△ SK3001	CE42670-001	C. R. T. SOCKET	

FRONT CONTROL PW BOARD ASS'Y (SJK-8011A-H2)

△ Symbol No.	Part No.	Part Name	Description
RESISTOR			
R8502	NRSA02J-0R0X	MG R.	0.0Ω 1/10W J
R8801-02	NRSA02J-561X	MG R.	560Ω 1/10W J
R8804-10	NRSA02J-471X	MG R.	470Ω 1/10W J
R8811-12	NRSA02J-221X	MG R.	220Ω 1/10W J
R8813-14	QRE121J-271Y	C R.	270Ω 1/2W J
R8815-16	NRSA02J-102X	MG R.	1kΩ 1/10W J
R8821	NRSA02J-822X	MG R.	8.2kΩ 1/10W J
R8822	NRSA02J-682X	MG R.	6.8kΩ 1/10W J
R8823	NRSA02J-103X	MG R.	10kΩ 1/10W J
R8824	NRSA02J-822X	MG R.	8.2kΩ 1/10W J
R8825	NRSA02J-682X	MG R.	6.8kΩ 1/10W J
R8826-27	NRSA02J-103X	MG R.	10kΩ 1/10W J
R8851	NRSA02J-682X	MG R.	6.8kΩ 1/10W J
R8861	NRSA02J-562X	MG R.	5.6kΩ 1/10W J
R8863	NRSA02J-472X	MG R.	4.7kΩ 1/10W J
R8864	NRSA02J-222X	MG R.	2.2kΩ 1/10W J
△ R8901	QRZ0111-474	C R.	470kΩ 1/2W K
CAPACITOR			
C8301-02	NCB21HK-472X	C CAP.	4700pF 50V K
C8303	NRSA02J-0R0X	MG R.	0.0Ω 1/10W J
C8801-02	NCB21HK-222X	C CAP.	2200pF 50V K
C8805	QETN1HM-106Z	E CAP.	10μF 50V M
C8851	NCB21EK-104X	C CAP.	0.1μF 25V K
C8852	QETN1CM-107Z	E CAP.	100μF 16V M
C8861	QETN1HM-106Z	E CAP.	10μF 50V M
△ C8901	QFZ9040-104	MF CAP.	0.1μFAC275V M
△ C8902	QFZ9040-474	MF CAP.	0.47μFAC275V M
△ C8991	QCZ9079-102	C CAP.	1000pFAC250V M
COIL			
L8301	QQL211K-270Y	PEAKING COIL	27μH
L8302	QQR0716-001Z	LEAD CORE	
L8303	QQL211K-270Y	PEAKING COIL	27μH
L8801-02	QQL211K-5R6Y	PEAKING COIL	5.6μH
L8803	QQR0716-001Z	LEAD CORE	
DIODE			
D8801	SPR-39MWWF	L. E. D.	
D8802-08	SLR-342MG-T16	L. E. D. (GRN)	
D8810	MA111-X	SI. DIODE	
D8811-12	MA3068/M/-X	ZENER DIODE	
D8851	MA3068/M/-X	ZENER DIODE	
D8861	MA111-X	SI. DIODE	
D8862	P1241-04	C. D. S.	
TRANSISTOR			
Q8801-02	DTA124EKA-X	DIGI. TRANSISTOR	
Q8803	DTC124EKA-X	DIGI. TRANSISTOR	
Q8861	2SA1037AK/QR/-X	SI. TRANSISTOR	
I C			
IC8801	JLC1562BF-X	I. C. (DIGI-MOS)	
IC8851	GPIU281Q	IFR DETECT UNIT	

Symbol No.	Part No.	Part Name	Description
OTHERS			
	LC20589-001B-H	LED HOLDER	
	CEMG002-001Z	FUSE CLIP	
△ F8901	QMF51E2-4R0J4	FUSE	4.0A
J8301	QNZ0453-001	JACK	
J8801	QNS0155-001	JACK	
△ LF8901	QQR0673-004	LINE FILTER	
S8801	QSW0619-003Z	PUSH SWITCH	MENU
S8802	QSW0619-003Z	PUSH SWITCH	CH DOWN
S8803	QSW0619-003Z	PUSH SWITCH	CH UP
S8804	QSW0619-003Z	PUSH SWITCH	TV/VIDEO
S8805	QSW0619-003Z	PUSH SWITCH	VOL DOWN
S8806	QSW0619-003Z	PUSH SWITCH	VOL UP
△ S8901	QSW0824-001	PUSH SWITCH	MAIN POWER
△ VA8901	ERZV10V621CS	VARISTOR	

AV SEL. PW BOARD ASS'Y (SJK0S004A-H2)

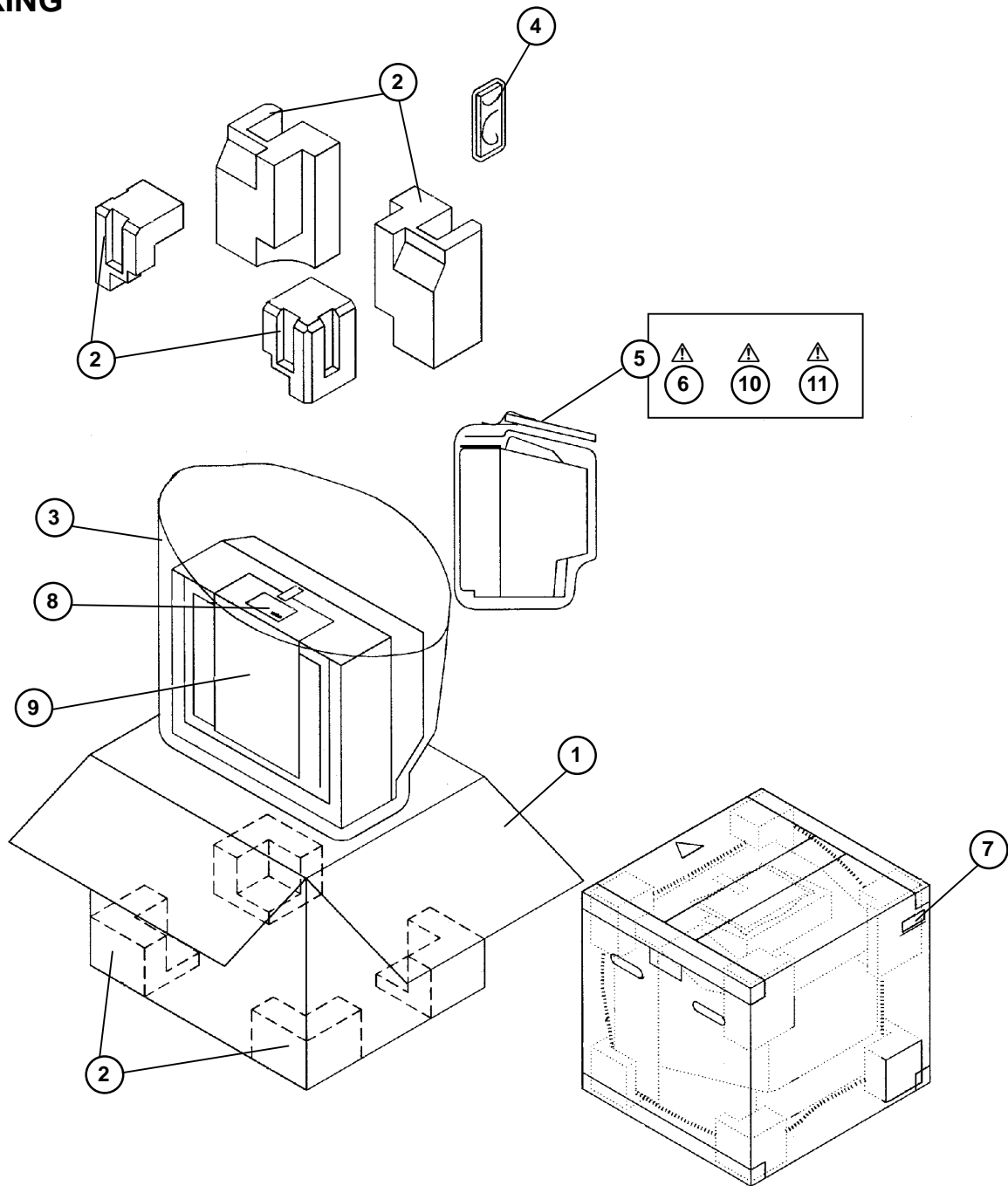
Symbol No.	Part No.	Part Name	Description
RESISTOR			
R0101-08	NRSA02J-750X	MG R	75Ω 1/10W J
R0110	NRSA02J-823X	MG R	82kΩ 1/10W J
R0112	NRSA02J-823X	MG R	82kΩ 1/10W J
R0113	NRSA02J-333X	MG R	33kΩ 1/10W J
R0114-15	NRSA02J-391X	MG R	390Ω 1/10W J
R0116	NRSA02J-104X	MG R	100kΩ 1/10W J
R0117-18	NRSA02J-750X	MG R	75Ω 1/10W J
R0119-20	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R0121-22	NRSA02J-333X	MG R	33kΩ 1/10W J
R0123	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R0124	NRSA02J-333X	MG R	33kΩ 1/10W J
R0125	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R0126	NRSA02J-333X	MG R	33kΩ 1/10W J
R0127	NRSA02J-750X	MG R	75Ω 1/10W J
R0128	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R0129	NRSA02J-333X	MG R	33kΩ 1/10W J
R0130	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R0131	NRSA02J-333X	MG R	33kΩ 1/10W J
R0132-43	NRSA02J-101X	MG R	100Ω 1/10W J
R0146-51	NRSA02J-101X	MG R	100Ω 1/10W J
R0152	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R0153	NRSA02J-333X	MG R	33kΩ 1/10W J
R0154	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R0155	NRSA02J-333X	MG R	33kΩ 1/10W J
R0156	NRSA02J-101X	MG R	100Ω 1/10W J
R0157-58	NRSA02J-562X	MG R	5.6kΩ 1/10W J
R0159-60	NRSA02J-102X	MG R	1kΩ 1/10W J
R0162	NRSA02J-103X	MG R	10kΩ 1/10W J
R0164-65	NRSA02J-221X	MG R	220Ω 1/10W J
R0166	NRSA02J-101X	MG R	100Ω 1/10W J
R0167	QRK126J-121X	C R	120Ω 1/2W J
R0168	NRSA02J-101X	MG R	100Ω 1/10W J

Symbol No.	Part No.	Part Name	Description
RESISTOR			
R0169	NRSA02J-152X	MG R	1.5kΩ 1/10W J
R0170	NRSA02J-102X	MG R	1kΩ 1/10W J
R0171	NRSA02J-333X	MG R	33kΩ 1/10W J
R0301	NRSA02J-102X	MG R	1kΩ 1/10W J
R0306	NRSA02J-101X	MG R	100Ω 1/10W J
R0307	NRSA02J-122X	MG R	1.2kΩ 1/10W J
R0311-12	NRSA02J-102X	MG R	1kΩ 1/10W J
R0313	QRE141J-181Y	C R	180Ω 1/4W J
R0326	NRSA02J-102X	MG R	1kΩ 1/10W J
R0327	NRSA02J-681X	MG R	680Ω 1/10W J
R0328	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R0329	NRSA02J-391X	MG R	390Ω 1/10W J
R0330	NRSA02J-102X	MG R	1kΩ 1/10W J
R0331	NRSA02J-103X	MG R	10kΩ 1/10W J
R0332	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R0333	NRSA02J-821X	MG R	820Ω 1/10W J
R0334-35	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
R0336	NRSA02J-152X	MG R	1.5kΩ 1/10W J
R0337	NRSA02J-103X	MG R	10kΩ 1/10W J
R0338	NRSA02J-153X	MG R	15kΩ 1/10W J
R0339-40	NRSA02J-103X	MG R	10kΩ 1/10W J
R0341	NRSA02J-821X	MG R	820Ω 1/10W J
R0342-44	NRSA02J-102X	MG R	1kΩ 1/10W J
R0345	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R0346	NRSA02J-272X	MG R	2.7kΩ 1/10W J
R0347	NRSA02J-392X	MG R	3.9kΩ 1/10W J
R0348	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R0349	NRSA02J-102X	MG R	1kΩ 1/10W J
R0350	NRSA02J-272X	MG R	2.7kΩ 1/10W J
R0351	NRSA02J-681X	MG R	680Ω 1/10W J
R0352	NRSA02J-102X	MG R	1kΩ 1/10W J
R0353	NRSA02J-681X	MG R	680Ω 1/10W J
R0354	NRSA02J-102X	MG R	1kΩ 1/10W J
R0355	NRSA02J-103X	MG R	10kΩ 1/10W J
R0356	NRSA02J-221X	MG R	220Ω 1/10W J
R0357	NRSA02J-562X	MG R	5.6kΩ 1/10W J
R0358	NRSA02J-102X	MG R	1kΩ 1/10W J
R0359	NRSA02J-103X	MG R	10kΩ 1/10W J
R0360	NRSA02J-561X	MG R	560Ω 1/10W J
R0361	NRSA02J-391X	MG R	390Ω 1/10W J
R0362	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R0363	NRSA02J-681X	MG R	680Ω 1/10W J
R0364	NRSA02J-102X	MG R	1kΩ 1/10W J
R0365	NRSA02J-103X	MG R	10kΩ 1/10W J
R0366-68	NRSA02J-391X	MG R	390Ω 1/10W J
R0369	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R0370-71	NRSA02J-821X	MG R	820Ω 1/10W J
R0601	NRSA02J-225X	MG R	2.2MΩ 1/10W J
R0602	NRSA02J-223X	MG R	22kΩ 1/10W J
R0605	NRSA02J-333X	MG R	33kΩ 1/10W J
R0611	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
R0614	NRSA02J-103X	MG R	10kΩ 1/10W J
R0615	NRSA02J-223X	MG R	22kΩ 1/10W J
R0617	NRSA02J-103X	MG R	10kΩ 1/10W J
R0619-20	NRSA02J-103X	MG R	10kΩ 1/10W J
R0622	NRSA02J-103X	MG R	10kΩ 1/10W J
R0623	NRSA02J-223X	MG R	22kΩ 1/10W J
R0625	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
R0653	NRSA02J-223X	MG R	22kΩ 1/10W J
R0654	NRSA02J-822X	MG R	8.2kΩ 1/10W J
R0655	NRSA02J-223X	MG R	22kΩ 1/10W J
R0656	NRSA02J-822X	MG R	8.2kΩ 1/10W J

△ Symbol No.	Part No.	Part Name	Description
CAPACITOR			
C0101-02	NCB21HK-472X	C CAP.	4700pF 50V K
C0103-06	NCB21HK-152X	C CAP.	1500pF 50V K
C0107	QETN1AM-108Z	E CAP.	1000μF 10V M
C0108-10	QETN1HM-106Z	E CAP.	10μF 50V M
C0111	NCB21HK-103X	C CAP.	0.01μF 50V K
C0112-14	QETN1HM-105Z	E CAP.	1μF 50V M
C0115-16	QETN1HM-106Z	E CAP.	10μF 50V M
C0117-18	QETN1HM-105Z	E CAP.	1μF 50V M
C0119	QETN1HM-106Z	E CAP.	10μF 50V M
C0120	QETN1HM-105Z	E CAP.	1μF 50V M
C0121	NCB21HK-103X	C CAP.	0.01μF 50V K
C0122	QETN1HM-106Z	E CAP.	10μF 50V M
C0123	QETN1HM-105Z	E CAP.	1μF 50V M
C0124	QETN1HM-106Z	E CAP.	10μF 50V M
C0125	QETN1HM-105Z	E CAP.	1μF 50V M
C0126	NCB21HK-103X	C CAP.	0.01μF 50V K
C0128	QETN1HM-106Z	E CAP.	10μF 50V M
C0129-30	QENC1EM-106Z	BP E CAP.	10μF 25V M
C0132	NDC21HJ-560X	C CAP.	56pF 50V J
C0133	QENC1EM-106Z	BP E CAP.	10μF 25V M
C0134	QETN1CM-107Z	E CAP.	100μF 16V M
C0135	NCB21HK-103X	C CAP.	0.01μF 50V K
C0136-37	NCF21CZ-105X	C CAP.	1μF 16V Z
C0138	QETN1CM-107Z	E CAP.	100μF 16V M
C0139-40	NCB21HK-152X	C CAP.	1500pF 50V K
C0301	NCB21HK-103X	C CAP.	0.01μF 50V K
C0302-03	QENC1EM-106Z	BP E CAP.	10μF 25V M
C0304	QETN1HM-106Z	E CAP.	10μF 50V M
C0305	QENC1EM-106Z	BP E CAP.	10μF 25V M
C0309	QETN1HM-106Z	E CAP.	10μF 50V M
C0314	QETN1CM-107Z	E CAP.	100μF 16V M
C0322	QETN1CM-107Z	E CAP.	100μF 16V M
C0324	NCB21EK-104X	C CAP.	0.1μF 25V K
C0325-26	QETN1EM-476Z	E CAP.	47μF 25V M
C0329	QETN1CM-107Z	E CAP.	100μF 16V M
C0332-36	NCB21HK-103X	C CAP.	0.01μF 50V K
C0337	QETN1EM-476Z	E CAP.	47μF 25V M
C0338-40	NCB21HK-103X	C CAP.	0.01μF 50V K
C0341	NDC21HJ-181X	C CAP.	180pF 50V J
C0342-43	NCB21HK-103X	C CAP.	0.01μF 50V K
C0344	NDC21HJ-121X	C CAP.	120pF 50V J
C0345	NCB21HK-103X	C CAP.	0.01μF 50V K
C0346	QETN1EM-476Z	E CAP.	47μF 25V M
C0348	NCB21HK-103X	C CAP.	0.01μF 50V K
C0349	QETN1EM-476Z	E CAP.	47μF 25V M
C0350	NCB21HK-103X	C CAP.	0.01μF 50V K
C0352	NDC21HJ-560X	C CAP.	56pF 50V J
C0353	NCB21HK-103X	C CAP.	0.01μF 50V K
C0354	NDC21HJ-221X	C CAP.	220pF 50V J
C0355	NCB21HK-103X	C CAP.	0.01μF 50V K
C0356	QETN1EM-476Z	E CAP.	47μF 25V M
C0357	QETN1AM-227Z	E CAP.	220μF 10V M
C0358	QETN1EM-476Z	E CAP.	47μF 25V M
C0359	NDC21HJ-221X	C CAP.	220pF 50V J
C0360	NDC21HJ-121X	C CAP.	120pF 50V J
C0362	QETN1AM-477Z	E CAP.	470μF 10V M
C0363	NCB21HK-103X	C CAP.	0.01μF 50V K
C0364-65	QETN1EM-476Z	E CAP.	47μF 25V M
C0601	QENC1HM-475Z	BP E CAP.	4.7μF 50V M
C0602	QETN1HM-475Z	E CAP.	4.7μF 50V M
C0604	QETN1CM-107Z	E CAP.	100μF 16V M
C0605	QETN1HM-106Z	E CAP.	10μF 50V M
C0607	QETN1HM-106Z	E CAP.	10μF 50V M
C0608	QENC1HM-475Z	BP E CAP.	4.7μF 50V M
C0609	NCB21HK-103X	C CAP.	0.01μF 50V K
C0613	QETN1HM-106Z	E CAP.	10μF 50V M
C0625	NCB21HK-332X	C CAP.	3300pF 50V K
C0626	NCB21HK-333X	C CAP.	0.033μF 50V K
C0628	QETN1HM-106Z	E CAP.	10μF 50V M
C0637	NCB21HK-332X	C CAP.	3300pF 50V K
C0638	NCB21HK-333X	C CAP.	0.033μF 50V K
C0639	QETN1HM-106Z	E CAP.	10μF 50V M
C0640	QETN1EM-476Z	E CAP.	47μF 25V M
C0641	NCB21EK-104X	C CAP.	0.1μF 25V K

△ Symbol No.	Part No.	Part Name	Description
TRANSFORMER			
T0301-03	CE42697-001	LOWPASS FILTER	
COIL			
L0101-04	QQL211K-5R6Y	PEAKING COIL	5.6μH
L0107-10	QQL211K-5R6Y	PEAKING COIL	5.6μH
L0111	QQL244K-680Z	PEAKING COIL	68μH
L0302-04	QQL244K-220Z	PEAKING COIL	22μH
L0306	QQL244K-330Z	PEAKING COIL	33μH
DIODE			
D0101-07	MA3120/M/-X	ZENER DIODE	
D0108-09	MTZJ9.1B-T2	ZENER DIODE	
TRANSISTOR			
Q0101-02	DTC323TK-X	DIGI. TRANSISTOR	
Q0103	2SA1037AK/QR/-X	SI. TRANSISTOR	
Q0106	2SC2412K/QR/-X	SI. TRANSISTOR	
Q0108	2SC1740S/QR/-T	SI. TRANSISTOR	
Q0109	2SA1037AK/QR/-X	SI. TRANSISTOR	
Q0303	2SC2412K/QR/-X	SI. TRANSISTOR	
Q0309-15	2SC2412K/QR/-X	SI. TRANSISTOR	
Q0316-17	2SA1037AK/QR/-X	SI. TRANSISTOR	
Q0318-21	2SC2412K/QR/-X	SI. TRANSISTOR	
IC			
IC0101	CXA2089Q	I C	
IC0301	TC9090AM	I. C. (DIGI-MOS)	
IC0304	LA7222	I. C. (MONO-ANA)	
IC0601	ANS285K	I. C. (MONO-ANA)	
IC0602	NJM2150AM-X	I. C. (MONO-ANA)	
OTHERS			
J0001	CM36337-A01-H	SHIELD COVER	
J0002	QN20454-001	PIN JACK	
J0003	QNN0349-001	PIN JACK	
J0004	QNN0349-002	PIN JACK	
J0005	QNN0348-001	PIN JACK	
J0006	QNN0349-001	PIN JACK	
	QNS0001-001	JACK	

PACKING



PACKING PARTS LIST

△ Ref.No.	Part No.	Part Name	Description
1	LC10845-007A-H	PACKING CASE	8pcs in 1set
2	LC10769-002A-H	CUSHION ASSY	
3	CP30967-004-H	POLY BAG	
4	RM-C113-2H	REMOCON UNIT	
5	CP30966-001-H	POLY BAG	
△ 6	LCT0864-001A-H	INST.BOOK	
7	CM47385-00B-H	POS/SERIAL LABEL	
8	LC30947-002A-H	CAUTION SHEET	
9	LC30946-001A-H	CRT PROTECTOR	
△ 10	LCT0661-001A-H	DIGEST MANUAL	
△ 11	LCT0662-001A-H	DIGEST MANUAL	



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AV29RXC-H #4



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